DSC-P100/P120

SERVICE MANUAL

LEVEL 2

Ver 1.0 2004.04
Revision History

How to use
Acrobat Reader

Photo: DSC-P100/Silver

DSC-P100

US Model
Canadian Model
E Model
Hong Kong Model
Australian Model
Chinese Model
Korea Model
Tourist Model
Japanese Model

DSC-P100/P120

AEP Model
UK Model

Link

SPECIFICATIONS	BLOCK DIAGRAMS	PRINTED WIRING BOARDS
SERVICE NOTE	FRAME SCHEMATIC DIAGRAM	REPAIR PARTS LIST
DISASSEMBLY	SCHEMATIC DIAGRAMS	

- For ADJUSTMENTS (SECTION 6), refer to SERVICE MANUAL, ADJ (987673451.pdf).
- For INSTRUCTION MANUAL, refer to SERVICE MANUAL, LEVEL 1 (987673441.pdf).
- Reference No. search on printed wiring boards is available.
- Note in Lens Frame Installation
- Exchange Method of Barrier Assy
- HELP: Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.

On the CH-146 and SY-104 boards

This service manual procides the information that is premised the circuit board replacement service and not intended repair inside the CH-146 and SY-104 boards.
Therefore, schematic diagram, printed wiring board and electrical parts list of the CH-146 and SY-104 boards are not shown.
The following pages are not shown.

Schematic diagram ..... Pages 4-9 to 4-28
Printed wiring board ..... Pages 4-39 to 4-42
Mounted parts location..... Pages 4-50 and 4-51
Electrical parts list ..... Pages 5-6 and 5-8 to 5-12

The above-described information is shown in service manual Level 3.

DIGITAL STILL CAMERA

SONY®

Self Diagnosis Supported model

Cyber-shot

MEMORY STICK ™

InfoLITHIUM ™ R TYPE

SPECIFICATIONS

■ Camera

[System]

Image device
9.04 mm (1/1.8 type) color CCD
Primary color filter

Total pixels number of camera
Approx. 5 255 000 pixels

Effective pixels number of camera
Approx. 5 090 000 pixels

Lens Carl Zeiss Vario-Tessar
3× zoom lens
f = 7.9 – 23.7 mm (38 – 114 mm when converted to a 35 mm still camera)
F2.8 – 5.2

Exposure control
Automatic exposure, Manual exposure, Scene selection (9 modes)

White balance
Automatic, Daylight, Cloudy, Fluorescent, Incandescent, Flash

File format (DCF compliant)
Still images: Exif Ver. 2.2 JPEG compliant, DPOF compatible
Movies: MPEG1 compliant (Monaural)

Recording media
"Memory Stick"

Flash Recommended distance (ISO set to Auto):
0.2 m to 3.5 m (7 7/8 inches to 11 feet 5 3/4 inches) (W)
0.3 m to 2.5 m (11 7/8 inches to 8 feet 2 3/8 inches) (T)

[Input and Output connectors]

Multi connector

USB communication
Hi-Speed USB (USB 2.0 compliant)

[LCD screen]

LCD panel
4.6 cm (1.8 type) TFT drive

Total number of dots
134 000 (560×240) dots

[Power, general]

Used battery pack
NP-FR1

Power requirements
3.6 V

Power consumption (during shooting with LCD screen on)
1.3 W

Operating temperature
0°C to +40°C (+32°F to +104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions
108×51.5×26.6 mm
(4 3/8×2 1/8×1 1/16 inches)
(W/H/D, excluding maximum protrusions)

Mass Approx. 183 g (6.5 oz) (including battery pack NP-FR1, "Memory Stick" and wrist strap)

Microphone
Electret condenser microphone

Speaker Dynamic speaker

Exif Print Compatible

PRINT Image Matching II
Compatible

PictBridge
Compatible

■ AC-LS5/LS5B AC Adaptor

Input rating
100 V to 240 V AC, 50/60 Hz, 11 W, 0.16 A to 0.09 A

Output rating
4.2 V DC, 1.5 A

Operating temperature
0°C to +40°C (+32°F to +104°F)

Storage temperature
–20°C to +60°C (–4°F to +140°F)

Dimensions
Approx. 48×29×81mm
(1 15/16×1 3/16×3 1/4 inches)
(W/H/D, excluding projecting parts)

Mass Approx. 130 g (5 oz) excluding power cord (mains lead)

■ NP-FR1 battery pack

Used battery
Lithium-ion battery

Maximum voltage
DC 4.2 V

Nominal voltage
DC 3.6 V

Capacity 4.4 Wh (1220 mAh)

■ Accessories

- AC-LS5/LS5B AC Adaptor (1)
- Power cord (mains lead) (1)
- NP-FR1 battery pack (DSC-P100:1, DSC-P120:2)
- Battery case (DSC-P100:1, DSC-P120:2)
- USB multi cable (1)
- A/V multi cable (1)
- Wrist strap (1)
- "Memory Stick" (32 MB) (1)
- CD-ROM (USB driver SPVD-012) (1)
- Operating instructions (1)
- Soft carrying case (DSC-P120 only) (1)

See page 5-13.

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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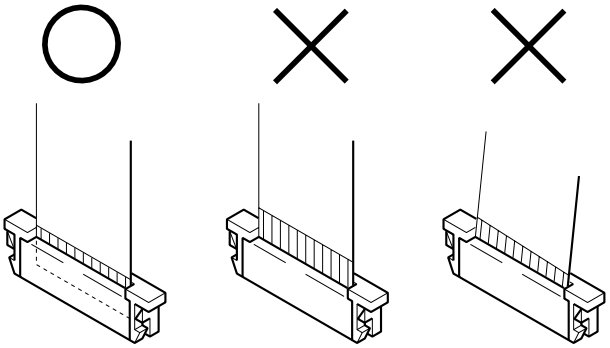
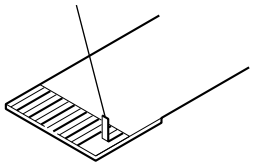
SECTION 1
SERVICE NOTE

1-1. NOTE FOR REPAIR

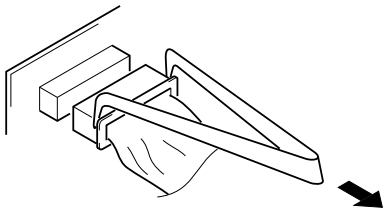
Make sure that the flat cable and flexible board are not cracked of bent at the terminal.
Do not insert the cable insufficiently nor crookedly.



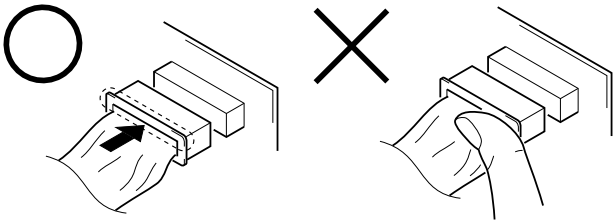
Cut and remove the part of gilt which comes off at the point.
(Be careful or some pieces of gilt may be left inside)



When remove a connector, don't pull at wire of connector.
It is possible that a wire is snapped.



When installing a connector, don't press down at wire of connector.
It is possible that a wire is snapped.

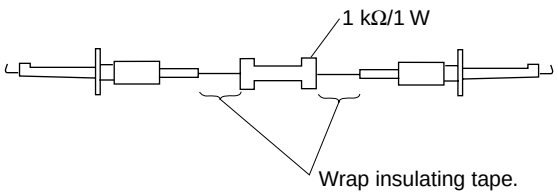


1-2. DISCHARGING OF THE ST-105 FLEXIBLE BOARD'S CHARGING CAPACITOR (C550)

The charging capacitor (C550) of the ST-105 flexible board is charged up to the maximum 300 V potential.
There is a danger of electric shock by this high voltage when the capacitor is handled by hand. The electric shock is caused by the charged voltage which is kept without discharging when the main power of the unit is simply turned off. Therefore, the remaining voltage must be discharged as described below.

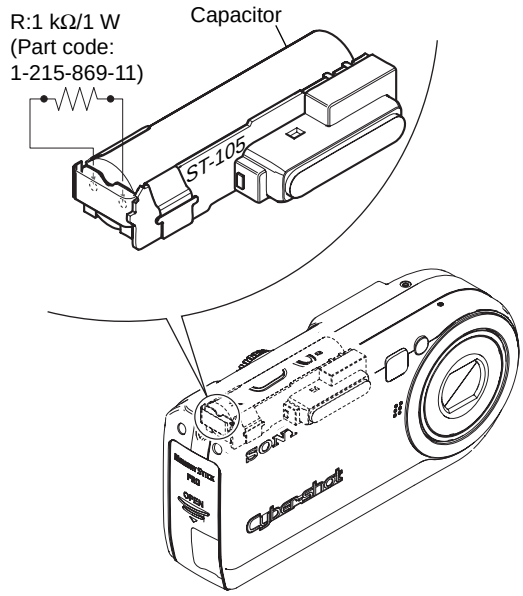
Preparing the Short Jig

To preparing the short jig, a small clip is attached to each end of a resistor of 1 kΩ /1 W (1-215-869-11).
Wrap insulating tape fully around the leads of the resistor to prevent electrical shock.



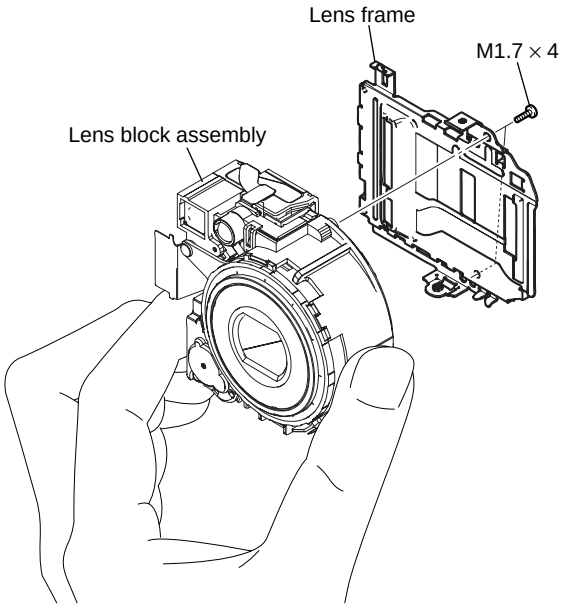
Discharging the Capacitor

Short-circuit between the positive and the negative terminals of charged capacitor with the short jig about 10 seconds.



1-3. NOTE IN LENS FRAME INSTALLATION

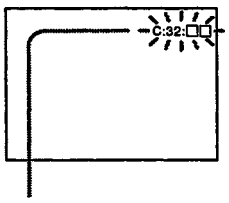
When tightening a screw, have both sides of the lens block assembly so as not for the load to depend.



1-4. DESCRIPTION ON SELF-DIAGNOSIS DISPLAY

Self-diagnosis display

The camera has a self-diagnosis display. This function displays the camera condition with five-digits (a combination of a letter and figures) on the LCD screen. If this occurs check the following code chart. The five-digits display informs you of the camera's current condition. The last two digits (indicated by ☐☐) will differ depending on the state of the camera.



Self-diagnosis display

- C: ☐☐: ☐☐
  You can reverse the camera malfunction yourself. (However, contact your Sony dealer or local authorized Sony service facility when you cannot recover from the camera malfunction.)
- E: ☐☐: ☐☐
  Contact your Sony dealer or local authorized Sony service facility.

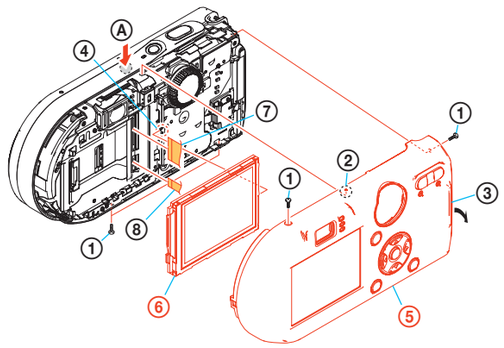
Display Code	Countermeasure	Cause	Caution Display During Error
C:32:☐☐	Turn the power off and on again.	Trouble with hardware.	SYSTEM ERROR
C:13:☐☐	Format the "Memory stick".	Unformatted memory stick is inserted.	FORMAT ERROR
	Insert a new "Memory Stick".	Memory stick is broken.	MEMORY STICK ERROR
E:61:☐☐	Checking of lens drive circuit.	When failed in the focus and zoom initialization.	—
E:91:☐☐	Checking of flash unit or replacement of flash unit.	Abnormality when flash is being charged.	

HELP

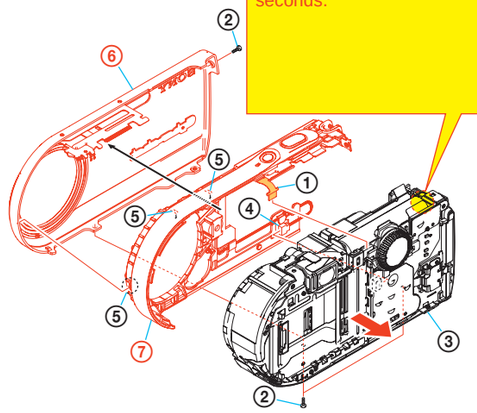
SECTION 2
DISASSEMBLY

2-1. FLOW CHART

The following flow chart shows the disassembly procedure.

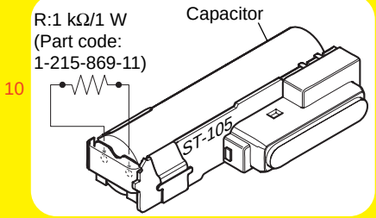


① Screw (M1.4) *x4*
② Remove the boss, pushing Ⓐ portion.
③ Remove the rear cabinet from battery lid side.
④ Claw *x1*
⑤ Rear cabinet
⑥ Panel block assy
⑦ LCD flexible: CN001
⑧ Back light flexible: CN002

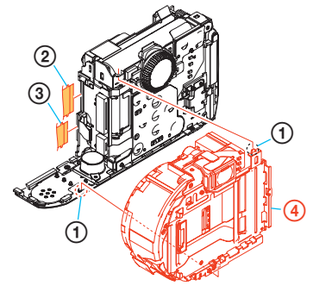


Note: High-voltage cautions

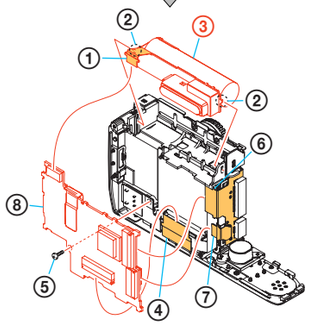
Discharging the Capacitor
Short-circuit between the two points with the short jig about 10 seconds.



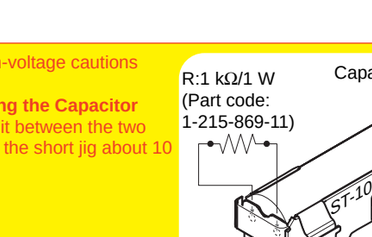
① Control switch block (RL): CN003
② Screw (M1.4) *x3*
③ Main block assy
Note: Mic harness is connected.
④ Mic harness: CN707
⑤ Claw *x3*
⑥ Front cabinet
⑦ Control switch block (RL)



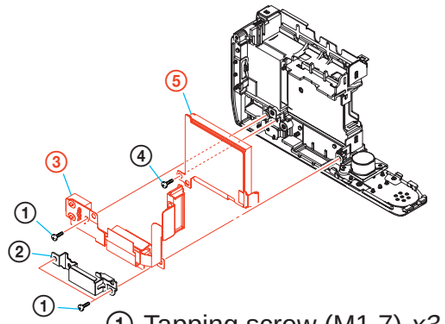
① Claw *x2*
② CD-511: CN101
③ Lens block flexible: CN201
④ Lens block



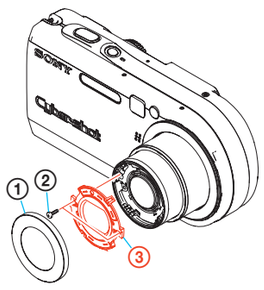
① ST-105 flexible: CN706
② Claw *x2*
③ ST-105
④ JK-266 flexible: CN704
⑤ Tapping screw (M1.7) *x1*
⑥ Control switch block (SW): CN703
⑦ MS-207 flexible: CN751
⑧ SY-104



① Screw (M1.4) *x1*
② Claw *x1*
③ Claw *x2*
④ Remove the Control switch block (SW) in the direction of arrow Ⓐ.



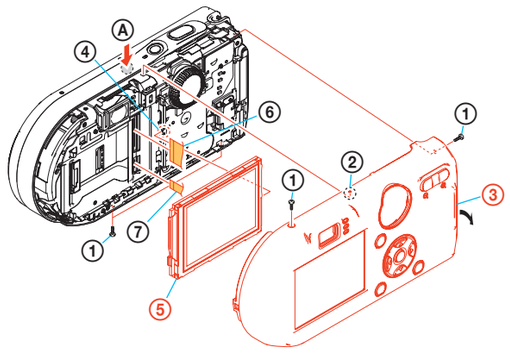
① Tapping screw (M1.7) *x3*
② Multi fixed plate
③ JK-266
④ Tapping screw (M1.7) *x1*
⑤ MS-207

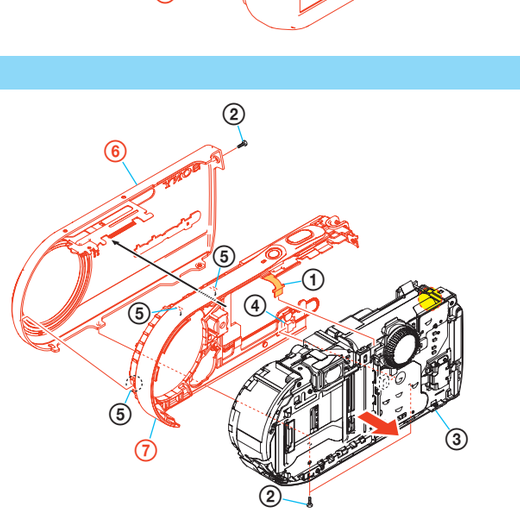


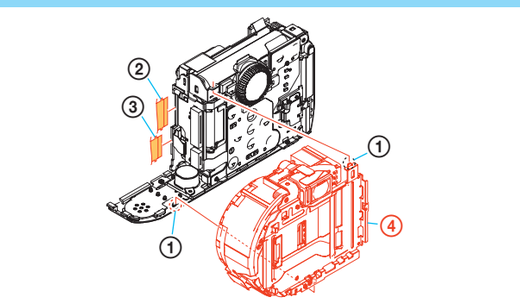
① Ornamental ring A
② Tapping screw (M1.2) *x2*
③ Barrier assy

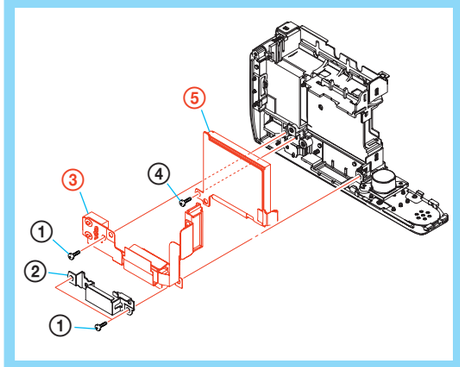
Note: When you exchange rings, be sure to follow the procedure carried on "2-3. Exchange Method of Barrier Assy" (2-5 page).

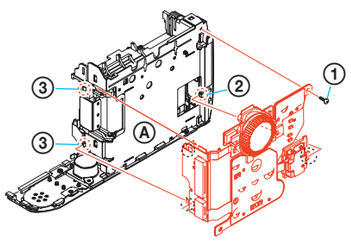
2-2. SY-104 BOARD SERVICE POSITION

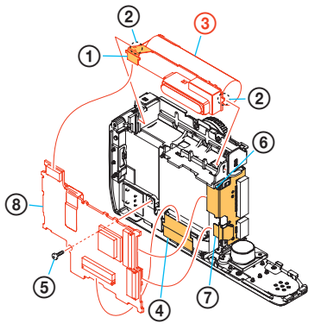


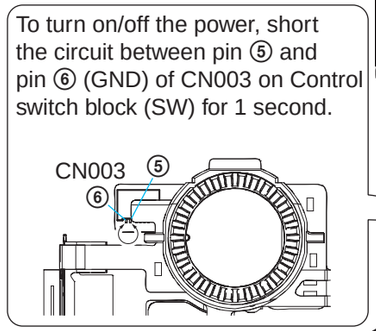


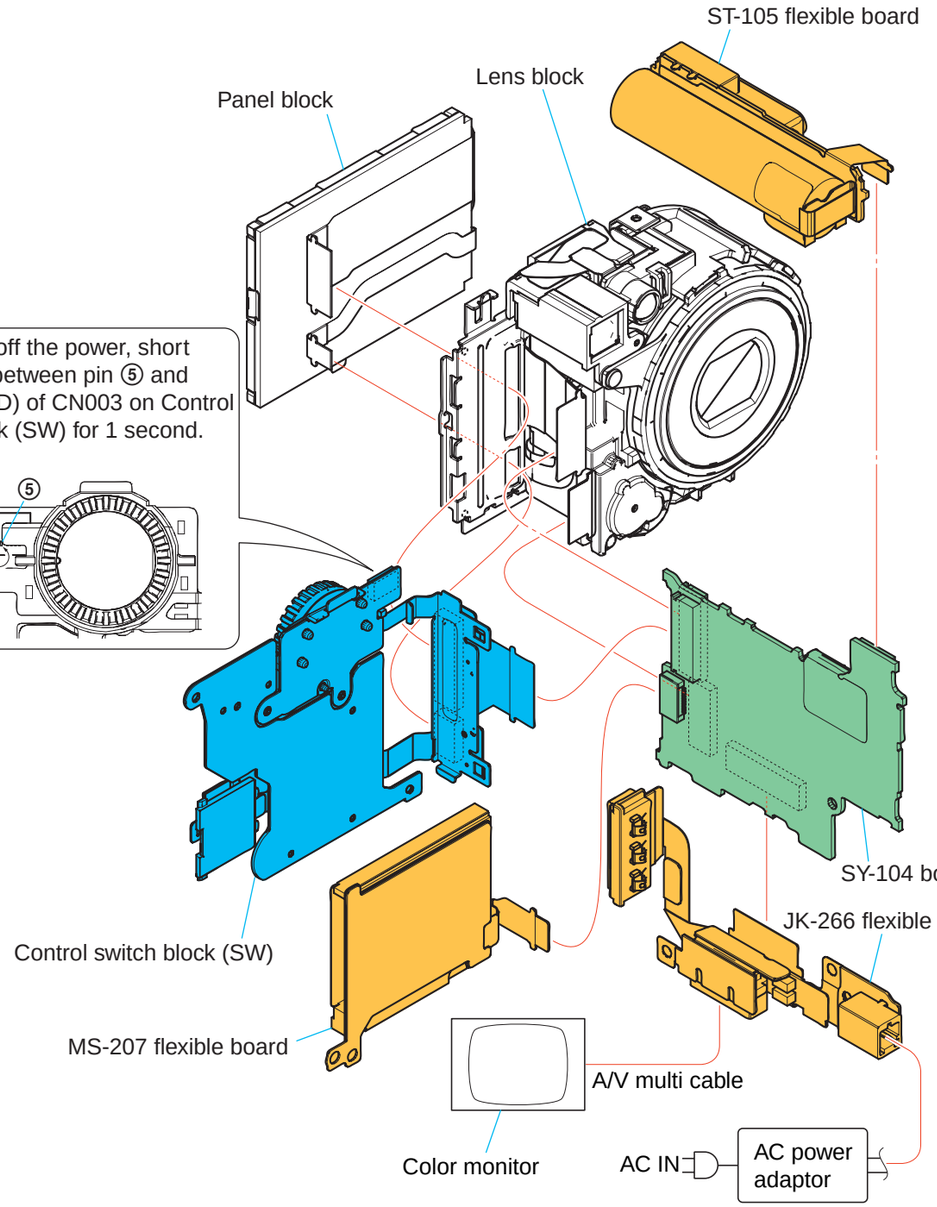








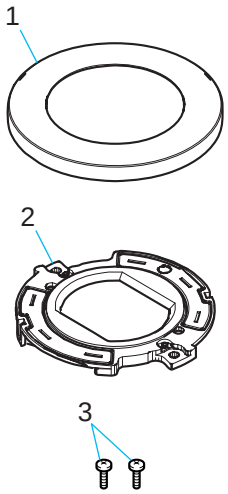

To turn on/off the power, short the circuit between pin ⑤ and pin ⑥ (GND) of CN003 on Control switch block (SW) for 1 second.
CN003
5
6



2-3. EXCHANGE METHOD OF BARRIER ASSY

Service parts

	Part Number	Part Name	Quantity
1	3-091-427-01	Ring (A), Ornamental	1
2	X-3954-476-1	Barrier Assy	1
3	3-086-156-31	Tapping screw (P2)	2



Tools used

Torque driver
Soldering iron
Weight about 60g
Adhesive (Super X) (Note)

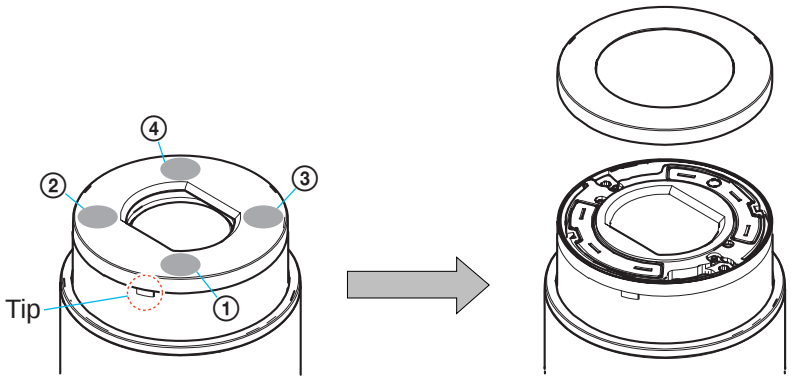
Note: Use adhesive (Super X) or an equivalent article.
Don't use what becomes white after drying like a quick-drying glue.

2-3-1. PEEL OFF OLD ORNAMENTAL RING A

The Ornamental Ring A has adhered to the Barrier Assy strongly and accordingly, use a soldering iron to weaken the adhesive force.
Heat four circled portions with the soldering iron.
Heating temperature is about 300ºC.
Beware of a burn since the entire Ornamental Ring becomes hot.
* As the adhesive force of Ornamental Ring A is considerably large, the forced peeling will damage the group-1 frame.

Insert the tip of tweezers, etc. into a notch of the group-1 frame and prize the ring.
* Take extreme care so as not to damage the coated surface of the group-1 frame.
In case of difficult peeling, heat the ring again with the soldering iron.
If this re-heating failed, it may be advisable that the ring be peeled while heating the portions ① → ② → ③ → ④ in the under figure one by one sequentially.

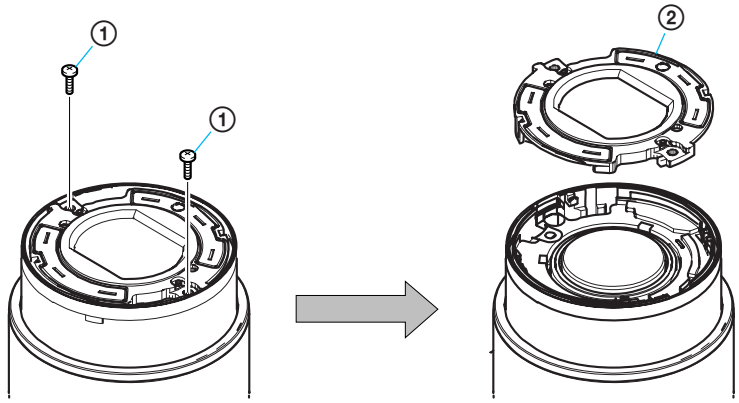
* Discard the removed Ornamental Ring A.



2-3-2. REMOVE OLD BARRIER ASSY

① Remove two screws.
* Discard the removed screws.

② Remove the Barrier Assy.
* Discard the removed Barrier Assy.

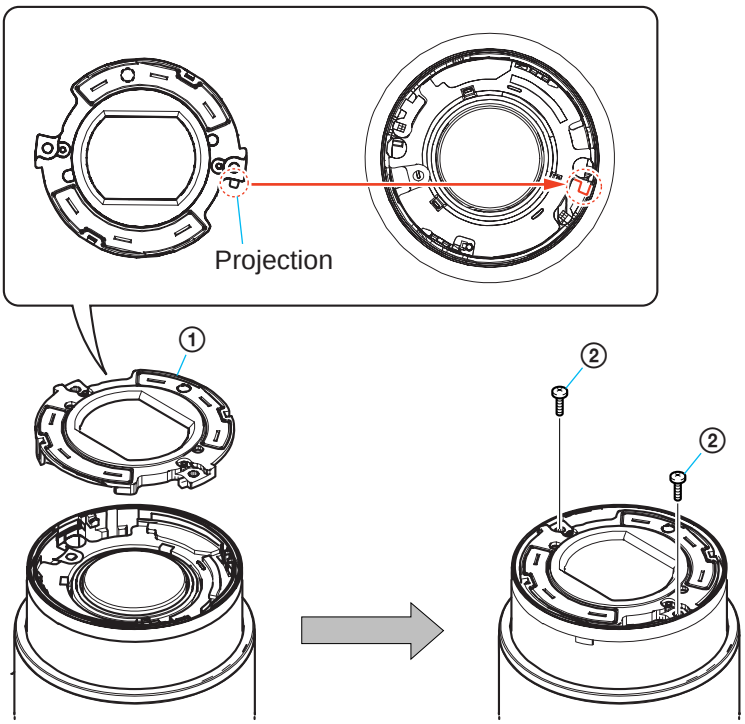


* After removing the Barrier Assy, if the “G1 Dust-Proof Ring” was removed, it must be returned to the home position.
  In returning the ring, adjust the location of a projection to the lens direction.
  This is an important part to prevent the dust and light from coming in.
* After removing the Barrier Assy, take extreme care not to drop dust or foreign substances in the lens barrel.

2-3-3. INSTALL NEW BARRIER ASSY

① Install new Barrier Assy by paying attention to the projection of the Barrier Assy in relation to the position shown in the under figure.

② Tighten two screws.
* Tightening torque = 0.5 kgf

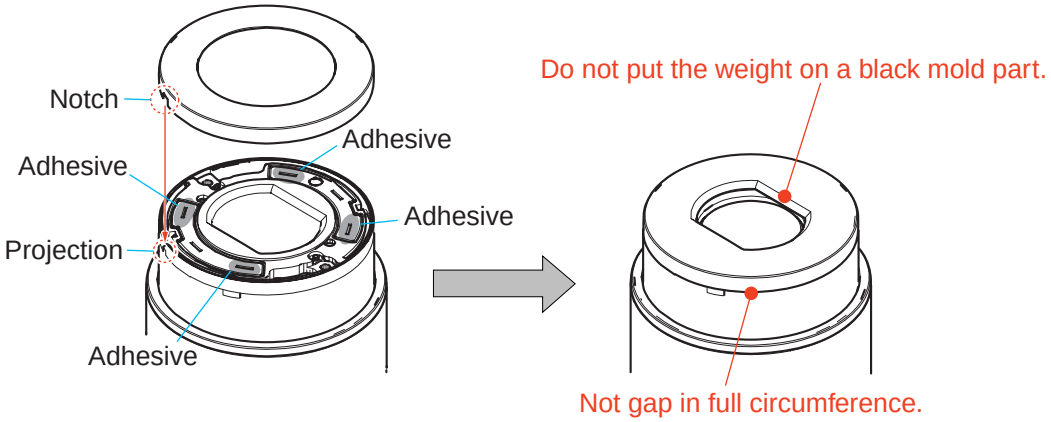


2-3-4. ADHERE THE ORNAMENTAL RING A

Apply an adhesive to four recesses on the top surface of the Barrier Assy.
* Do not apply too much adhesive. (Make quantity of adhesives into the quantity in which a groove hides.)

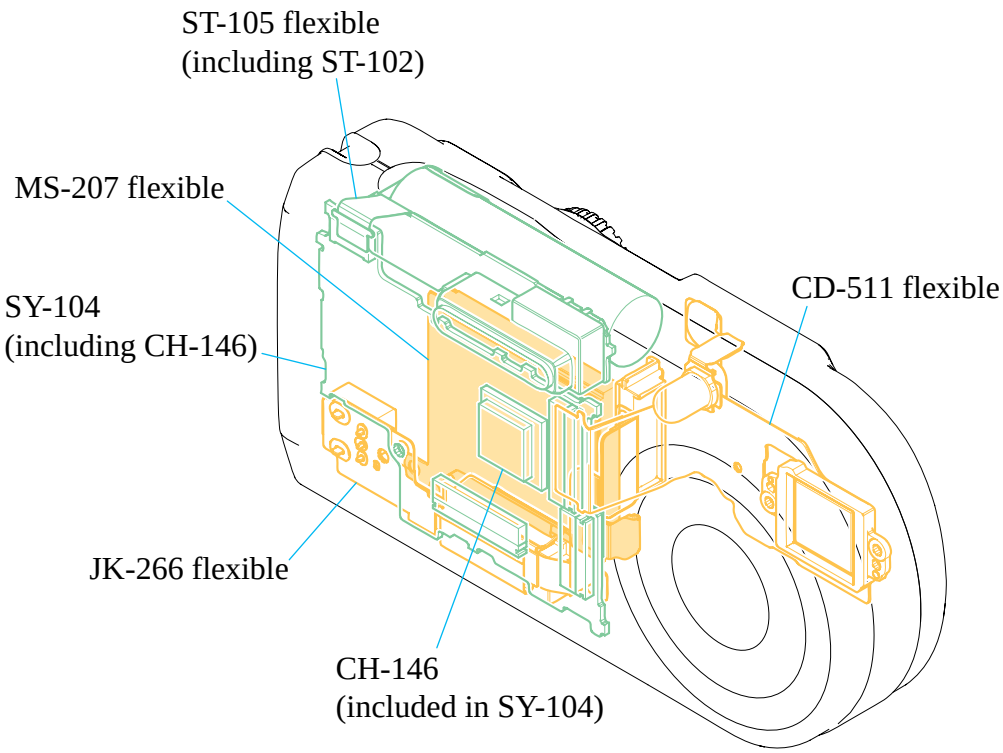
Meeting a “notch” of the Ornamental Ring A with a “projection” of the group-1 frame, push the Ornamental Ring A into the group-1 frame.
* The projection of the spring for preventing static electricity must be tilted.

Put the 60g weight on the Ornamental Ring A so that the Ornamental Ring A does not float up until the adhesive hardens.
Note: Be careful not to give a shock.
* After the weight was put, no gap must be present in full circumference between Ornamental Ring A and group-1 frame.
  A gap, if present, causes the crackle sound NG.
* The weight must push in the Ornamental Ring A only.
  If the weight is put on the mold part of the Barrier Assy, the Ornamental Ring A will float up.



Completion after 30 minutes.

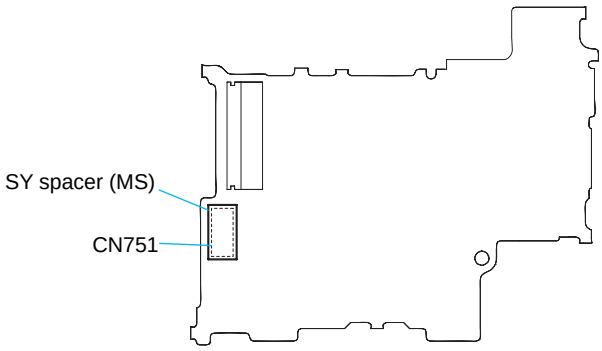
2-4. CIRCUIT BOARDS LOCATION

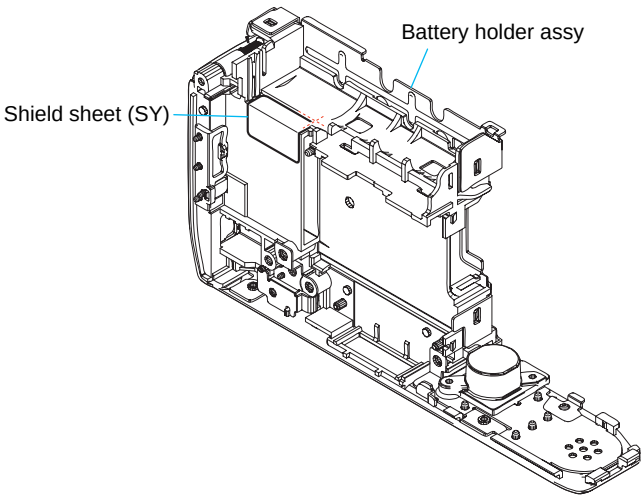


Board Name	Function
CD-511 flexible	CCD IMAGER
CH-146 (included in SY-104)	CCD SIGNAL PROCESS
JK-266 flexible	DC IN, MULTI CONNECTOR
MS-207 flexible	MEMORY STICK CONNECTOR
ST-102	FLASH DRIVE
ST-105 flexible	CHARGING CAPACITOR
SY-104 (Including CH-146)	CAMERA MODULE, CAMERA DSP, LENS DRIVE, SH DSP, FRONT CONTROL, LCD DRIVE, AUDIO, DC/DC CONVERTER

HELP

Sheet attachment positions and procedures of processing the flexible boards/harnesses are shown.





3. BLOCK DIAGRAMS

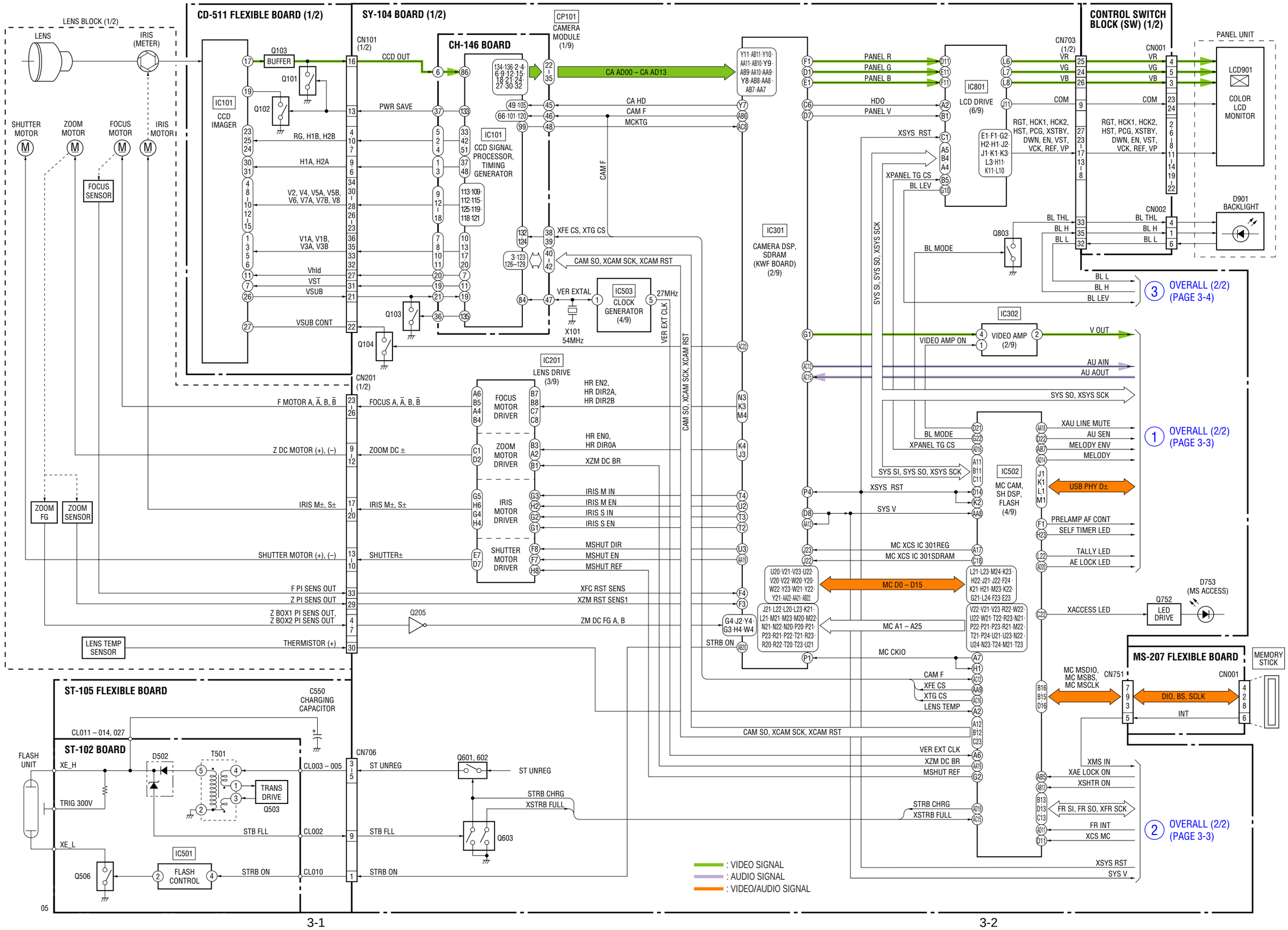
Link

- OVERALL BLOCK DIAGRAM (1/2)
- POWER BLOCK DIAGRAM (1/2)
- OVERALL BLOCK DIAGRAM (2/2)
- POWER BLOCK DIAGRAM (2/2)

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/2)

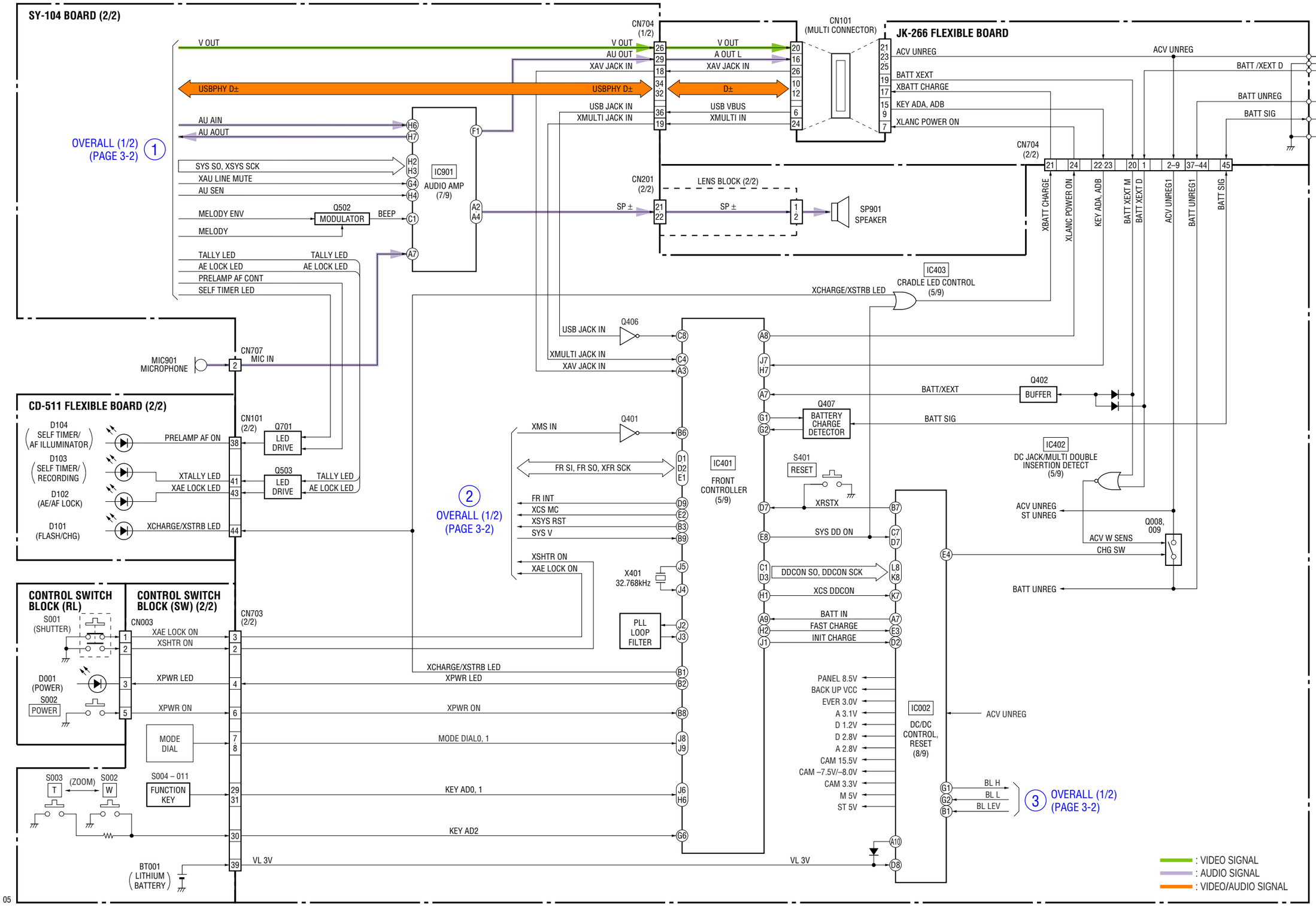
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

3-2. OVERALL BLOCK DIAGRAM (2/2)

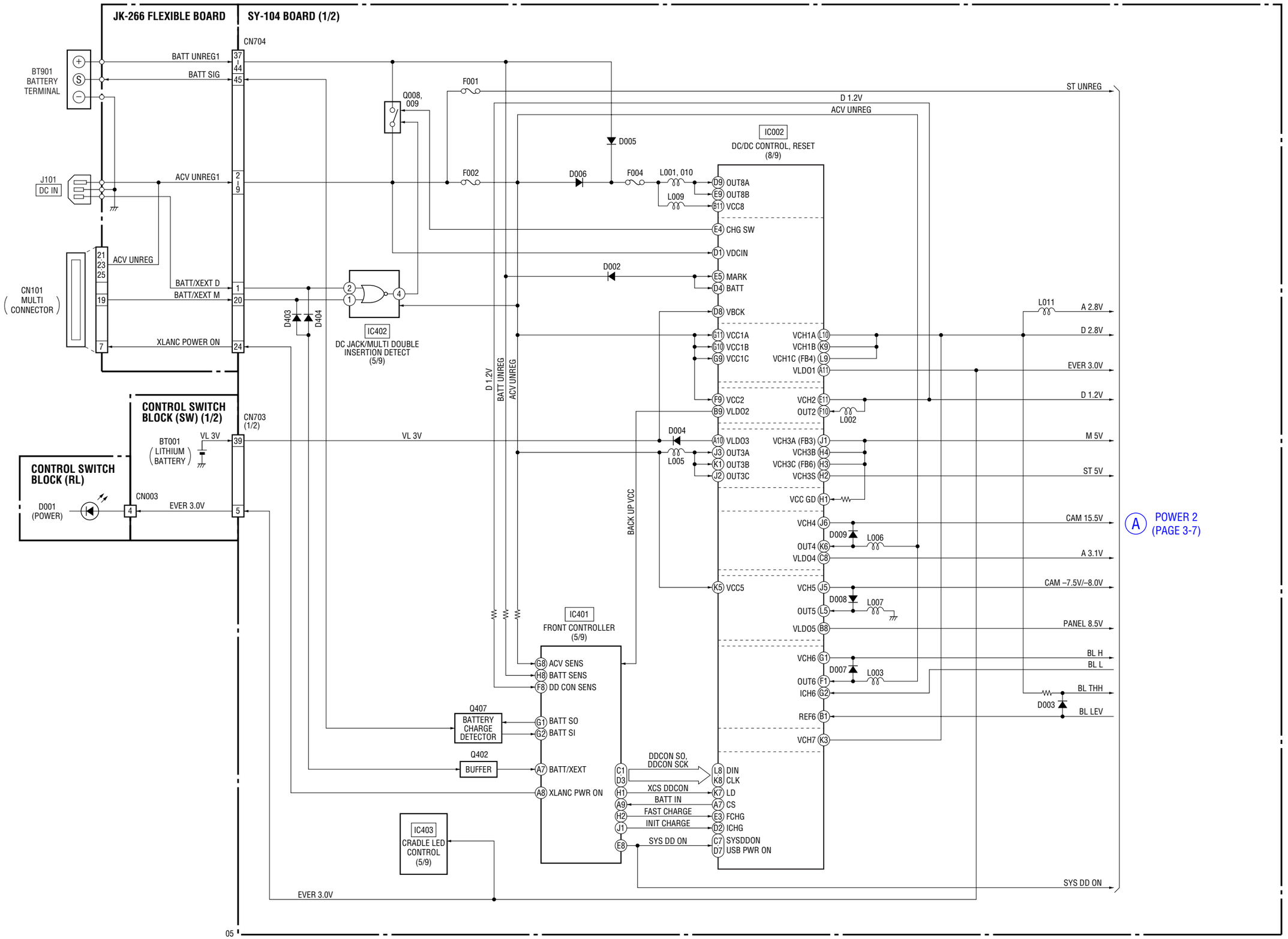
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

3-3. POWER BLOCK DIAGRAM (1/2)

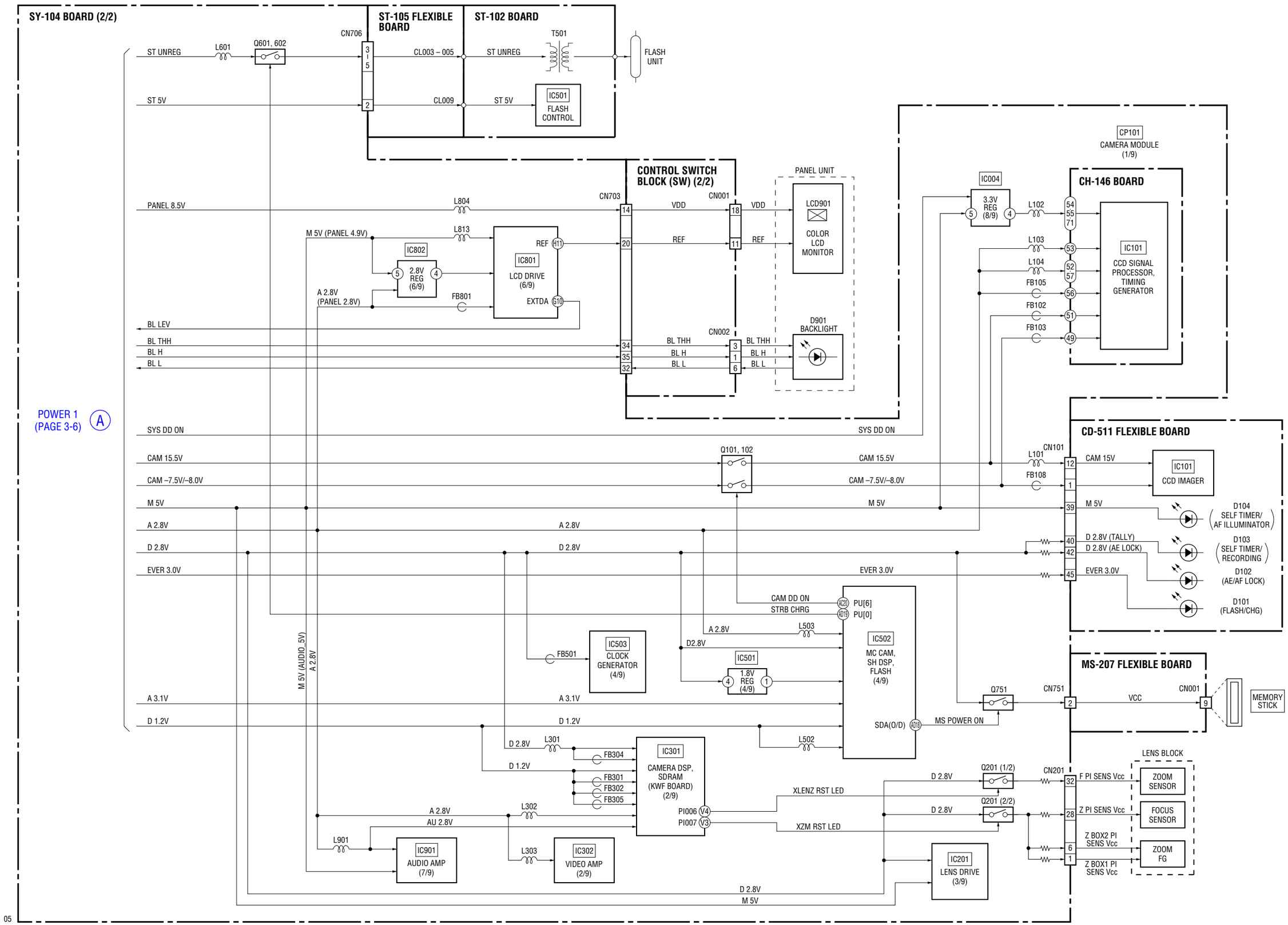
( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



3. BLOCK DIAGRAMS

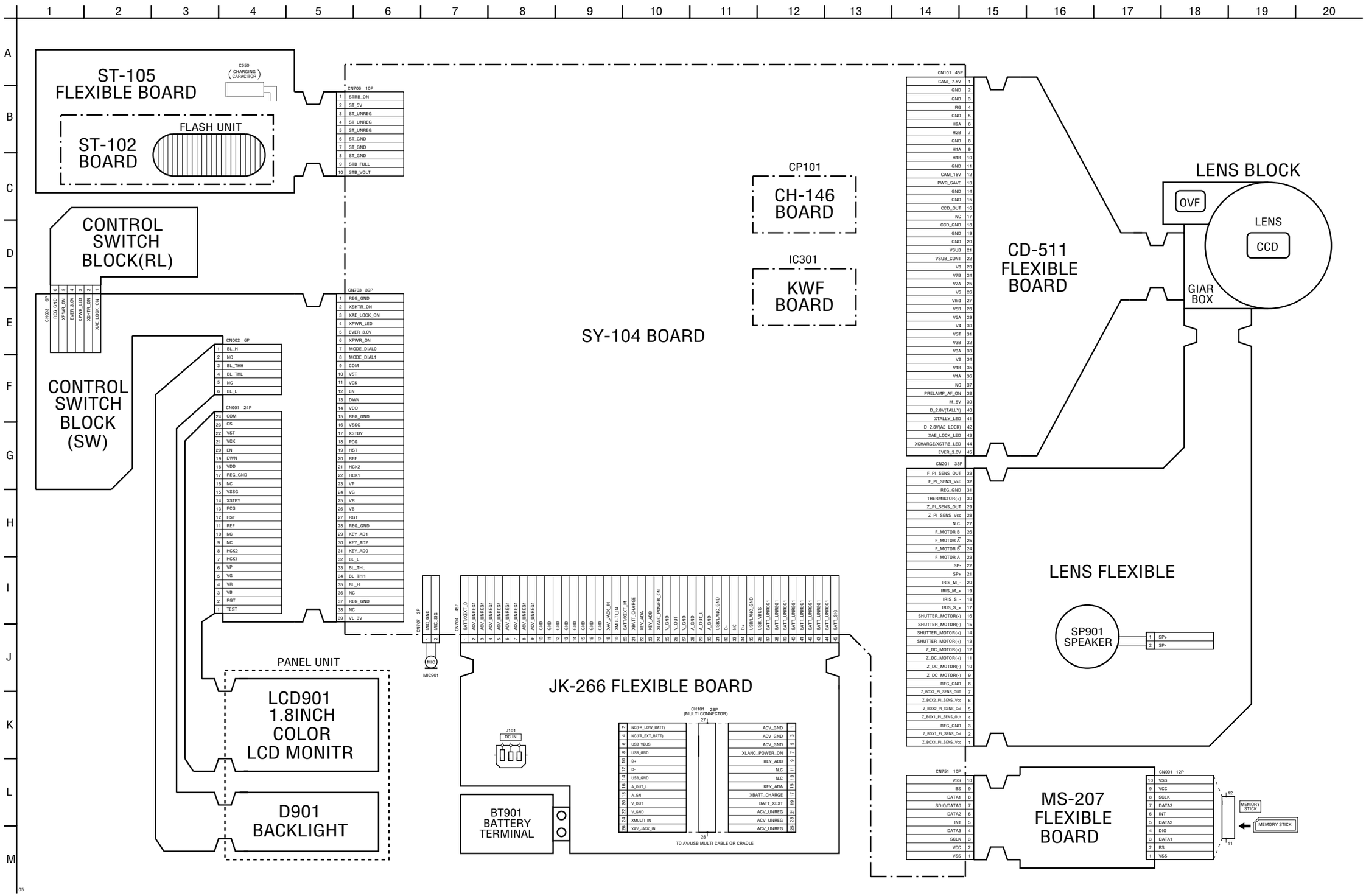
3-4. POWER BLOCK DIAGRAM (2/2)

( ) : Number in parenthesis ( ) indicates the division number of schematic diagram where the component is located.



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. SCHEMATIC DIAGRAMS

Link

- CD-511 FLEXIBLE BOARD (CCD IMAGER)
- MS-207 FLEXIBLE BOARD (MEMORY STICK CONNECTOR)
- ST-105 FLEXIBLE BOARD (CHARGING CAPACITOR)
- JK-266 FLEXIBLE BOARD (DC IN, MULTI CONNECTOR)
- ST-102 BOARD (FLASH DRIVE)
- CONTROL SWITCH BLOCK (SW), (RL)
- COMMON NOTE FOR SCHEMATIC DIAGRAMS

4-2. SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For schematic diagrams)

- All capacitors are in µF unless otherwise noted. pF : µµF. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. kΩ=1000 Ω, MΩ=1000 kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example	C541	L452
	22U	10UH
	TA A	2520

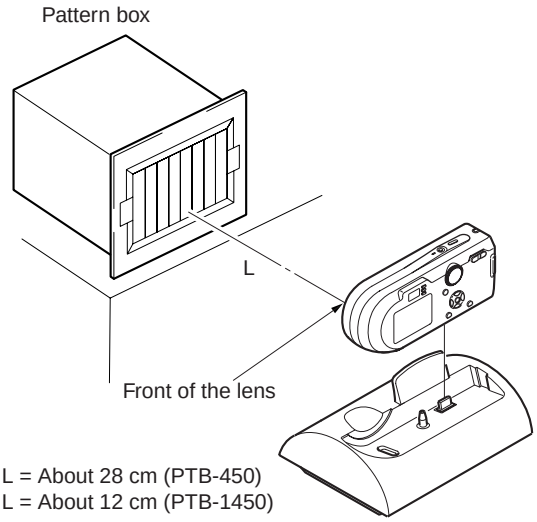
Kinds of capacitor
Case Size
External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination.
  Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.
- : VIDEO SIGNAL (ANALOG)
- : AUDIO SIGNAL (ANALOG)
- : VIDEO/AUDIO SIGNAL
- : VIDEO/AUDIO/SERVO SIGNAL
- : SERVO SIGNAL
- Circled numbers refer to waveforms.

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms.
  (VOM of DC 10 MΩ input impedance is used)
- Voltage values change depending upon input impedance of VOM used.)

1. Connection



L = About 28 cm (PTB-450)
L = About 12 cm (PTB-1450)

2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

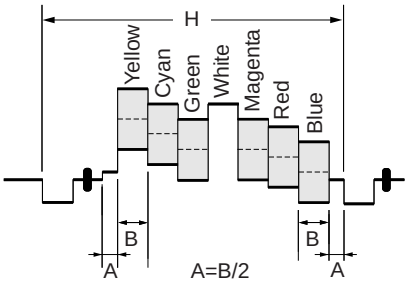


Fig. a (Video output terminal output waveform)

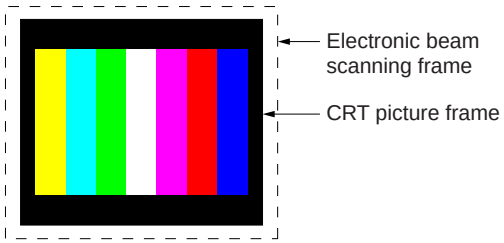


Fig.b (Picture on monitor TV)

When indicating parts by reference number, please include the board name.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Note : Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifie.

For Schematic Diagram

• Refer to page 4-37 for printed wiring board.

CD-511 FLEXIBLE BOARD

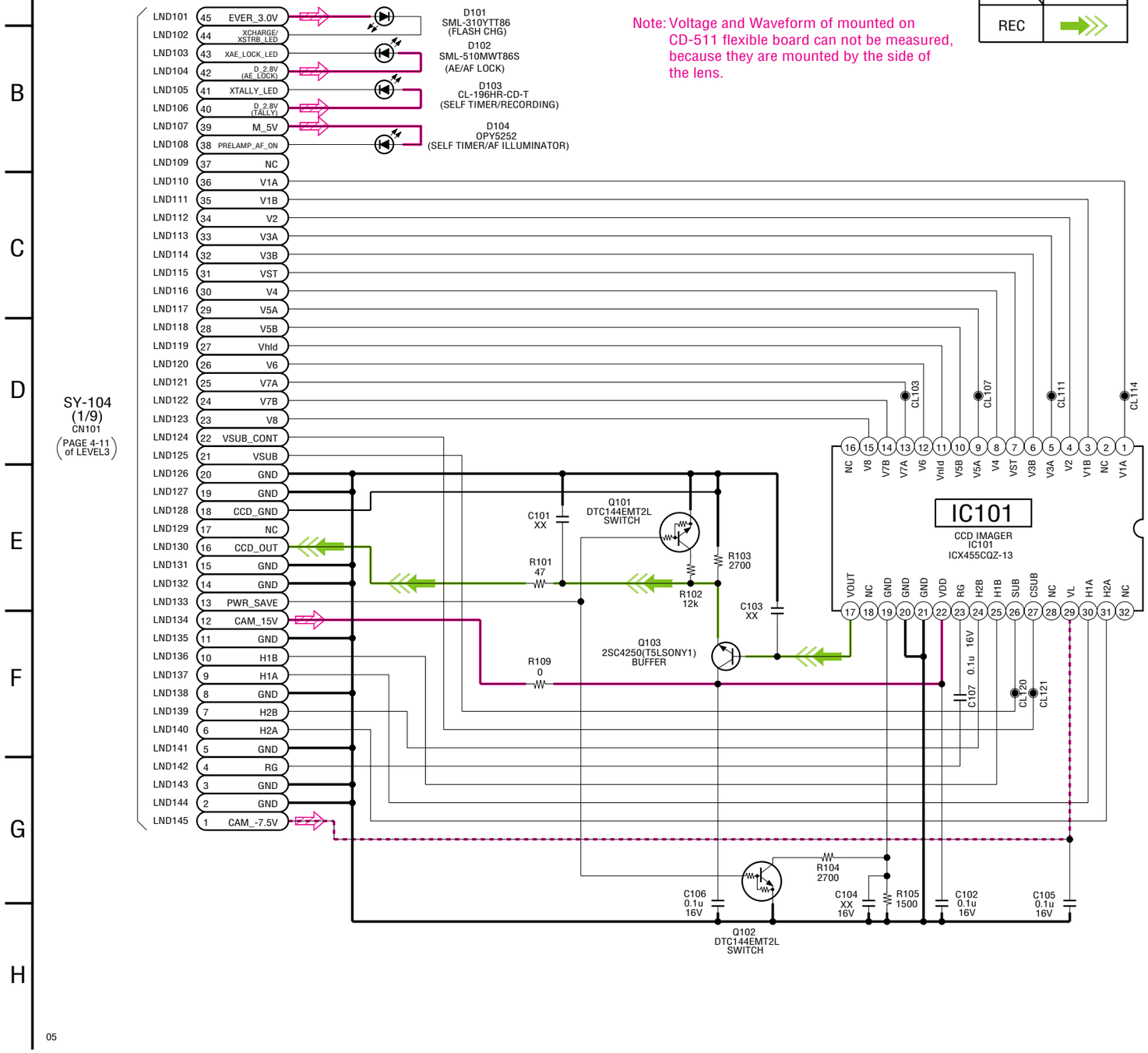
CCD IMAGER (CCD BLOCK)

Note: CD-511 flexible complete board and IC101 are not supplied, but there are included in CCD block assy.

Note: Voltage and Waveform of mounted on CD-511 flexible board can not be measured, because they are mounted by the side of the lens.

SIGNAL PATH

	VIDEO SIGNAL
	Y/CHROMA
REC	



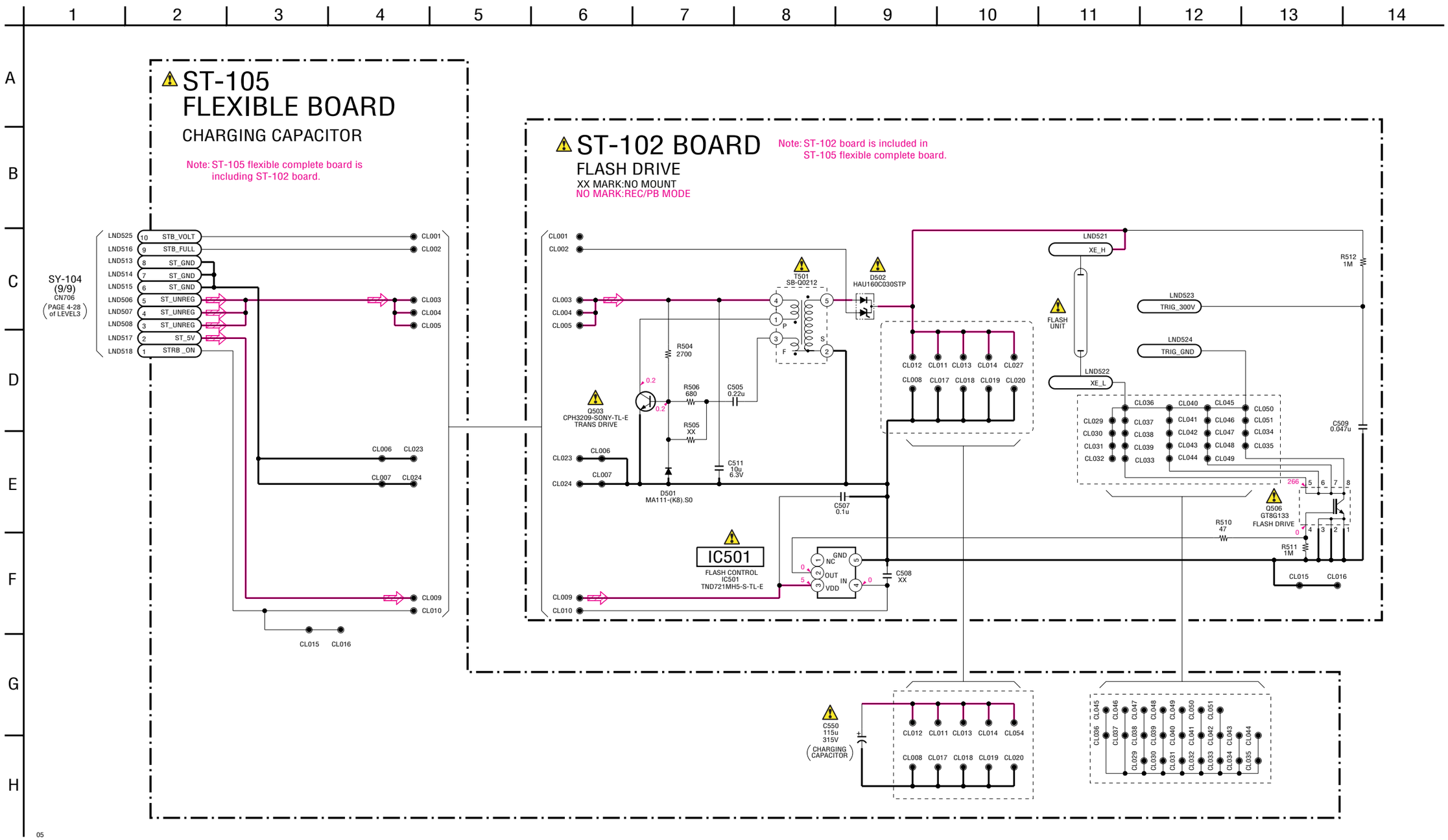
Precautions for Replacement of CCD Imager

- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

Schematic diagrams of the CH-146 and SY-104 boards are not shown.
Pages from 4-9 to 4-28 are not shown.

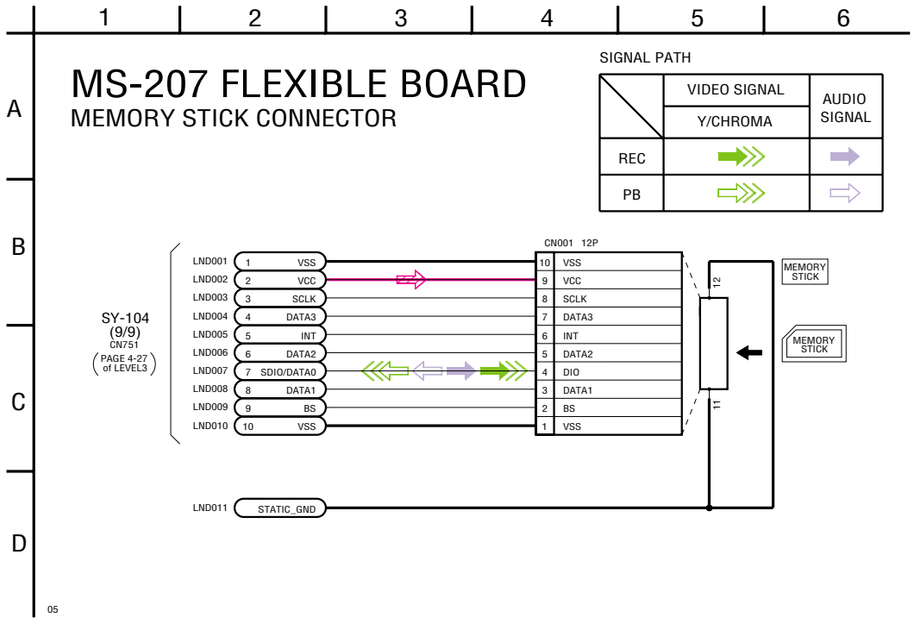
For Schematic Diagram

• Refer to page 4-43 for printed wiring board.

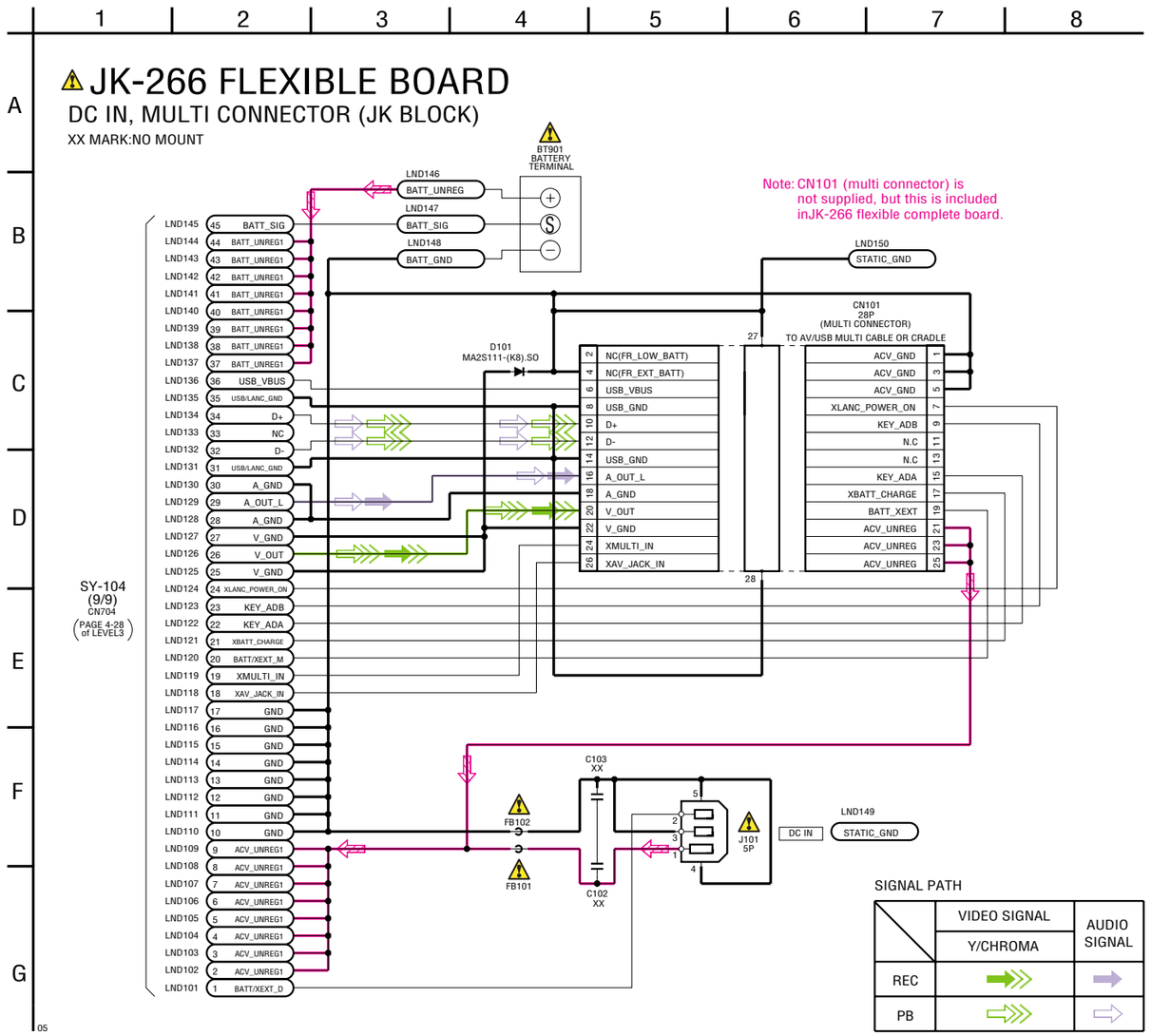


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

For Schematic Diagram
• Refer to page 4-45 for printed wiring board.

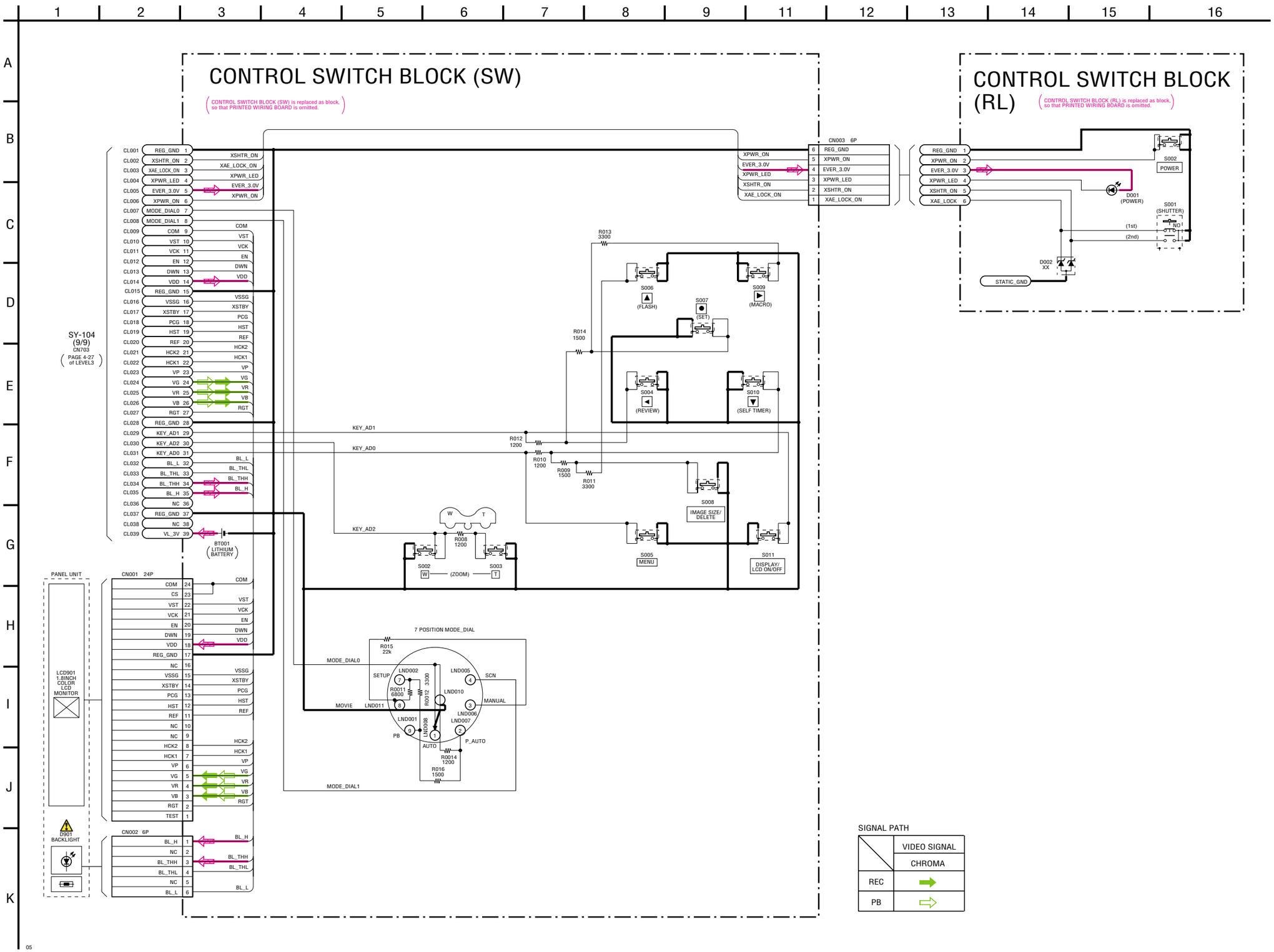


For Schematic Diagram
• Refer to page 4-46 for printed wiring board.



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

4-2. SCHEMATIC DIAGRAMS



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

4-3. PRINTED WIRING BOARDS

Link

- CD-511 FLEXIBLE BOARD
- MS-207 FLEXIBLE BOARD
- ST-105 FLEXIBLE BOARD
- JK-266 FLEXIBLE BOARD
- ST-102 BOARD
- COMMON NOTE FOR PRINTED WIRING BOARDS
- MOUNTED PARTS LOCATION
- CIRCUIT BOARDS LOCATION

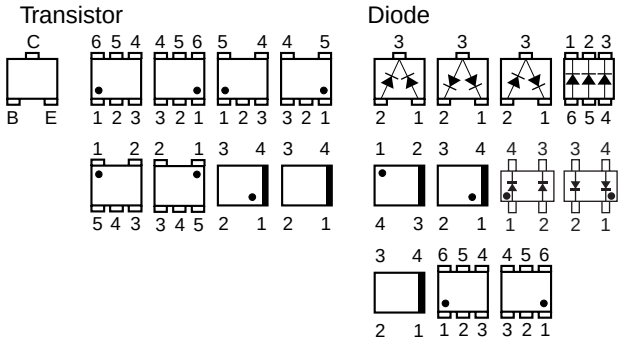
Board Name	Function
CD-511 FLEXIBLE	CCD IMAGER
ST-105 FLEXIBLE	CHARGING CAPACITOR
ST-102	FLASH DRIVE
MS-207 FLEXIBLE	MEMORY STICK CONNECTOR
JK-266 FLEXIBLE	DC IN, MULTI CONNECTOR

4-3. PRINTED WIRING BOARDS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS

- : Uses unleaded solder.
- : Circuit board
  : Flexible board
  Pattern from the side which enables seeing.
  : pattern of the rear side
  (The other layers' patterns are not indicated)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation

- Chip parts.

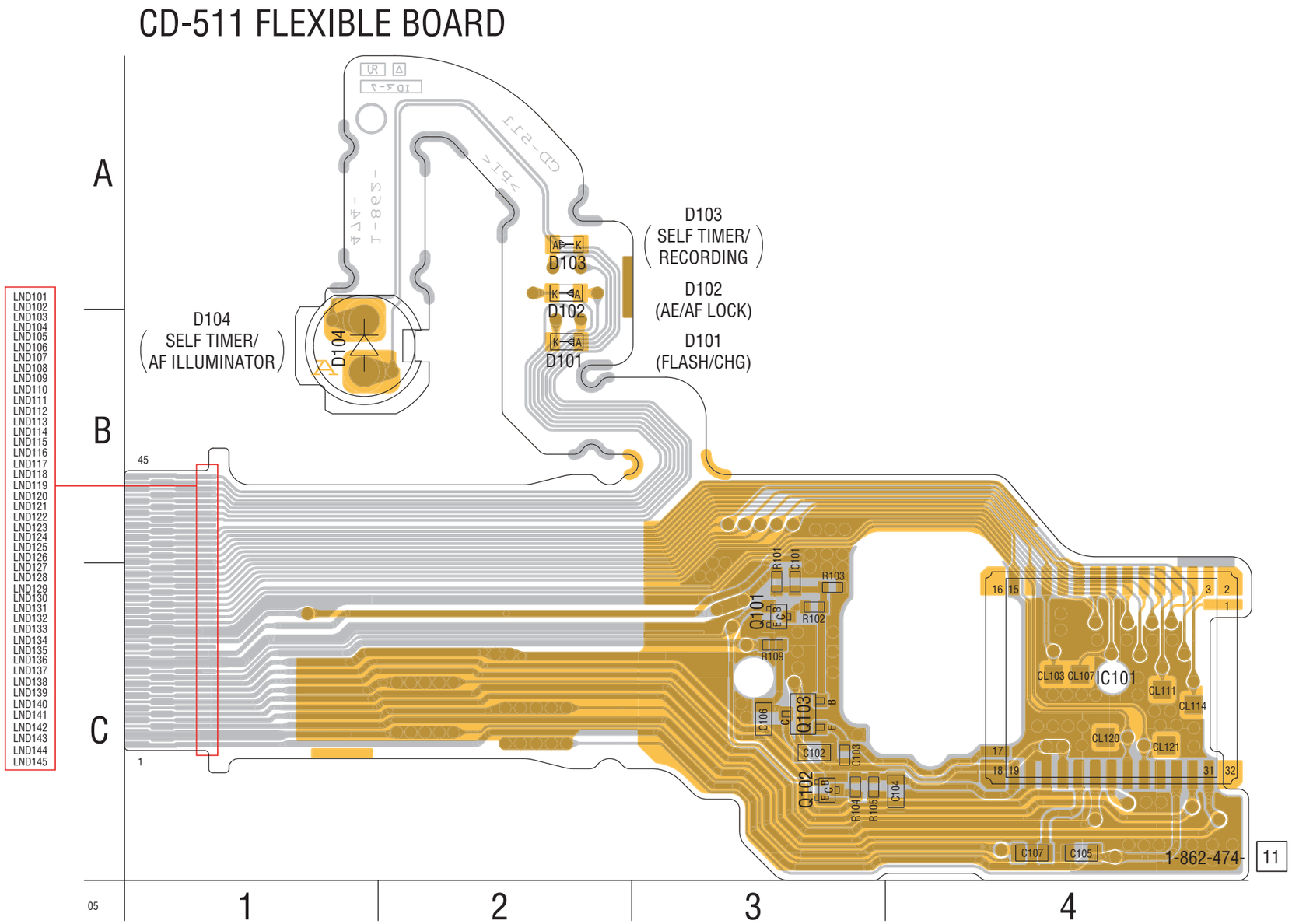


Board Name	Parts Location	Pattern	
		Total Number of Layers	Layers Not Indicated
CD-511 flexible	4-49	2 layers	–
ST-105 flexible	–	2 layers	–
ST-102	4-52	2 layers	–
MS-207 flexible	–	1 layer	–
JK-266 flexible	–	2 layers	–

CD-511 FLEXIBLE

Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.



Printed wiring boards of the CH-146 and SY-104 boards are not shown.
Pages from 4-39 to 4-42 are not shown.

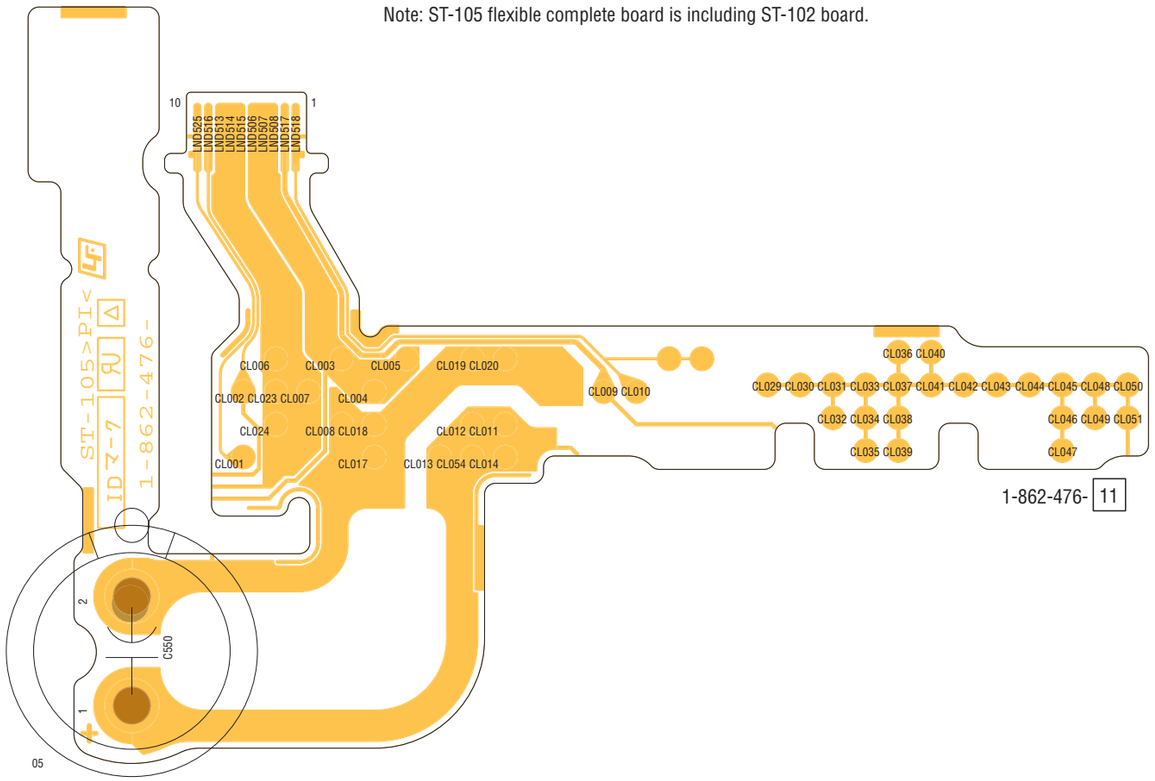
ST-105 FLEXIBLE

Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

ST-105 FLEXIBLE BOARD

Note: ST-105 flexible complete board is including ST-102 board.



1-862-476- 11

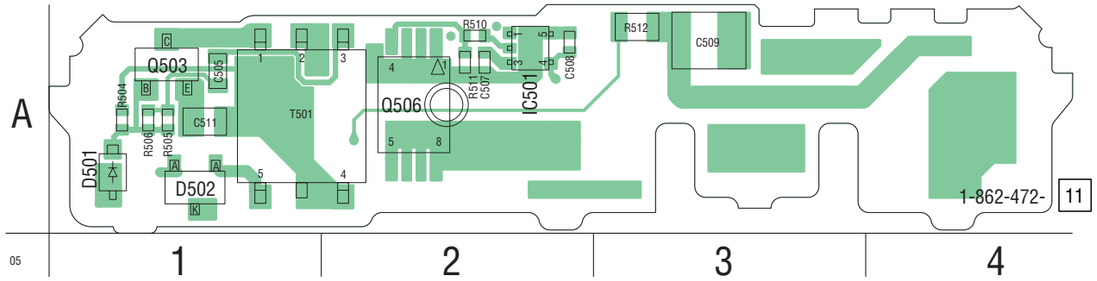
ST-102

Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

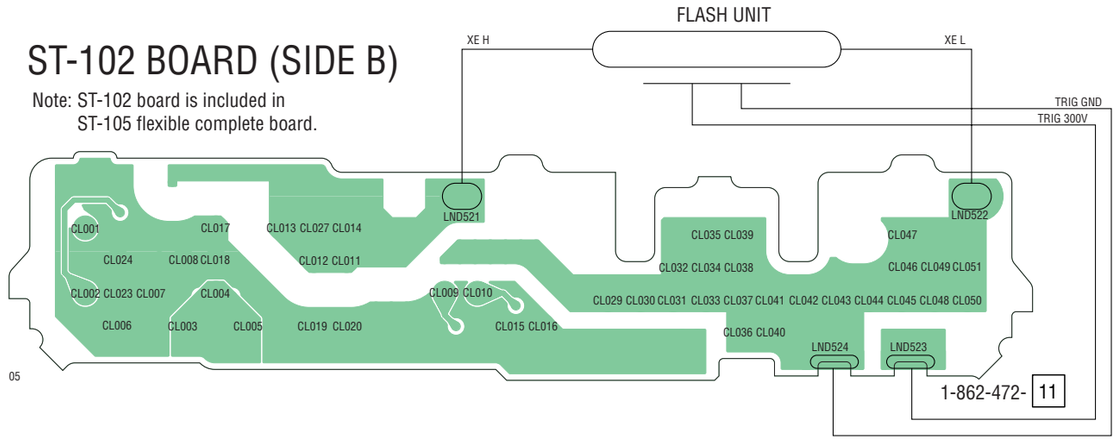
ST-102 BOARD (SIDE A)

Note: ST-102 board is included in ST-105 flexible complete board.



ST-102 BOARD (SIDE B)

Note: ST-102 board is included in ST-105 flexible complete board.

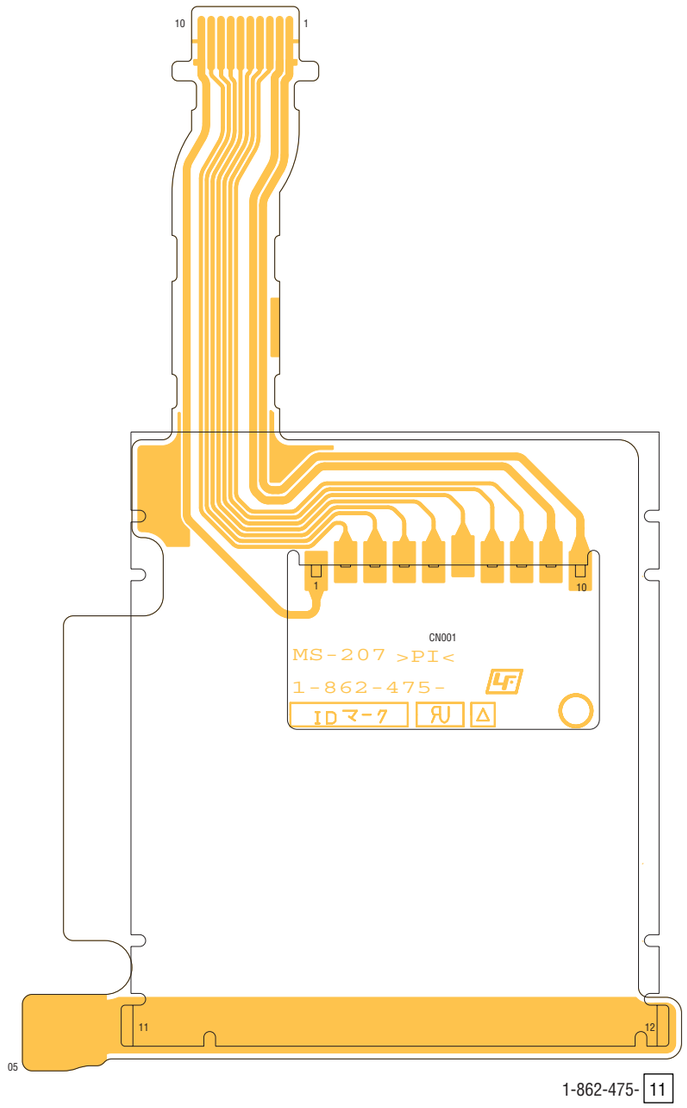


MS-207 FLEXIBLE

Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

MS-207 FLEXIBLE BOARD

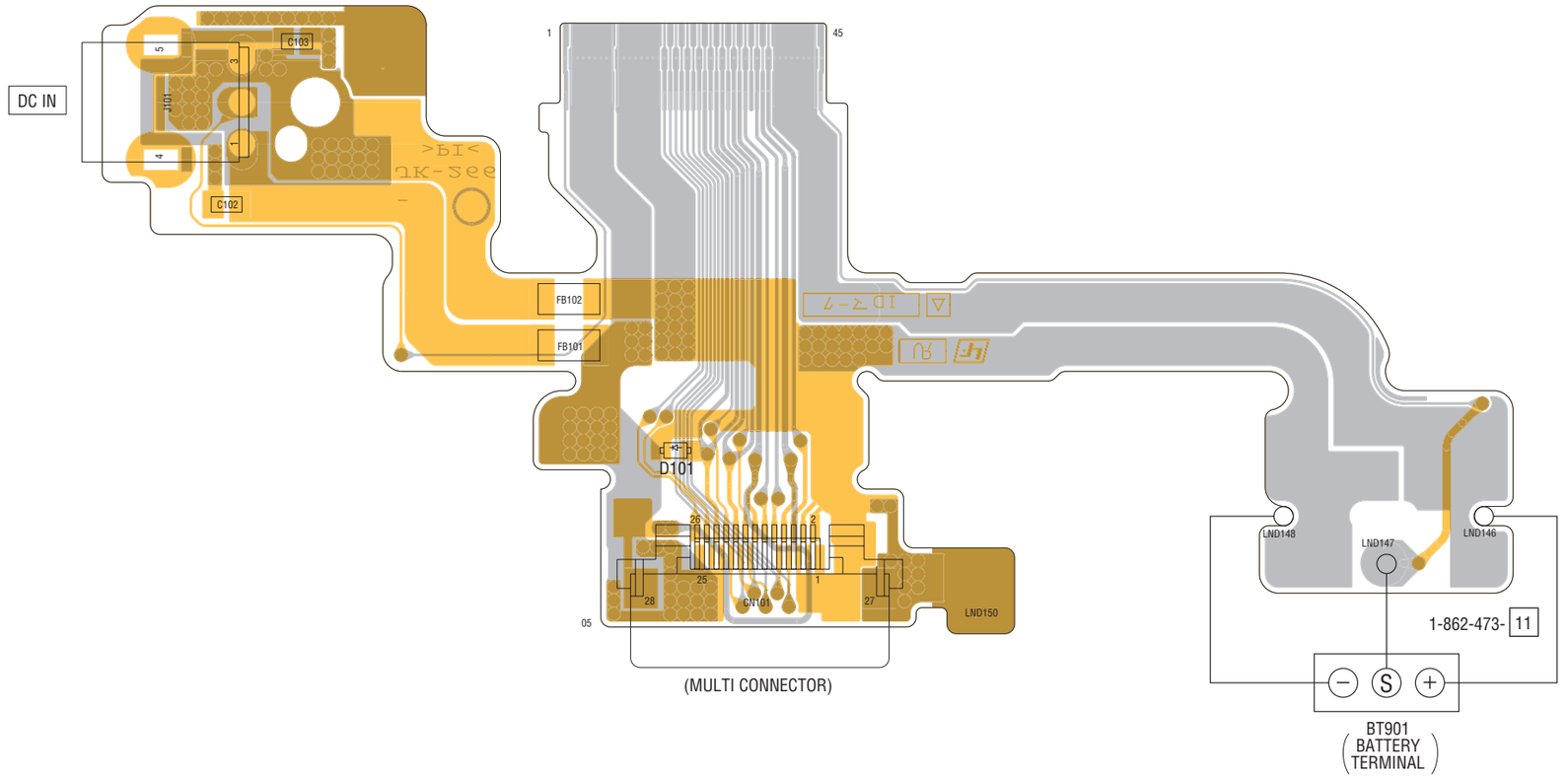


JK-266 FLEXIBLE

Note for Printed Wiring Board (See page 4-35).

: Uses unleaded solder.

JK-266 FLEXIBLE BOARD



4-3. PRINTED WIRING BOARDS

4-4. MOUNTED PARTS LOCATION

no mark : side A
* mark : side B

CD-511 FLEXIBLE BOARD

C102 C-3
C105 C-4
C106 C-3
C107 C-4

D101 B-2
D102 B-2
D103 A-2
D104 B-1

IC101 C-4

Q101 C-3
Q102 C-3
Q103 C-3

R101 C-3
R102 C-3
R103 C-3
R104 C-3
R105 C-3
R109 C-3

Mounted parts location of the CH-146 and SY-104 boards are not shown.
Page 4-50 and 4-51 are not shown.

4-3. PRINTED WIRING BOARDS

no mark : side A
* mark : side B

ST-102 BOARD

C505 A-1
C507 A-2
C509 A-3
C511 A-1

D501 A-1
D502 A-1

IC501 A-2

Q503 A-1
Q506 A-2

R504 A-1
R506 A-1
R510 A-2
R511 A-2
R512 A-3

T501 A-1

NOTE

5. REPAIR PARTS LIST

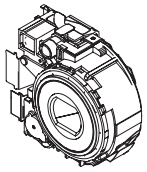
NOTE: Characters A to Z of the electrical parts list indicate location of exploded views in which the desired part is shown.

Link

EXPLODED VIEWS

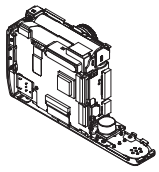
A

CABINET BLOCK SECTION



B

LENS BLOCK SECTION



C

BT HOLDER BLOCK SECTION

Link

ELECTRICAL PARTS LIST

ACCESSORIES

CD-511 FLEXIBLE BOARD B	MS-207 FLEXIBLE BOARD C	ST-105 FLEXIBLE BOARD C
JK-266 FLEXIBLE BOARD C	ST-102 BOARD C	

5. REPAIR PARTS LIST

SECTION 5
REPAIR PARTS LIST

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , µPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  AUS : Australian model
  CH : Chinese model
  CND : Canadian model
  HK : Hong Kong model
  J : Japanese model
  JE : Tourist model
  KR : Korean model

When indicating parts by reference number, please include the board name.

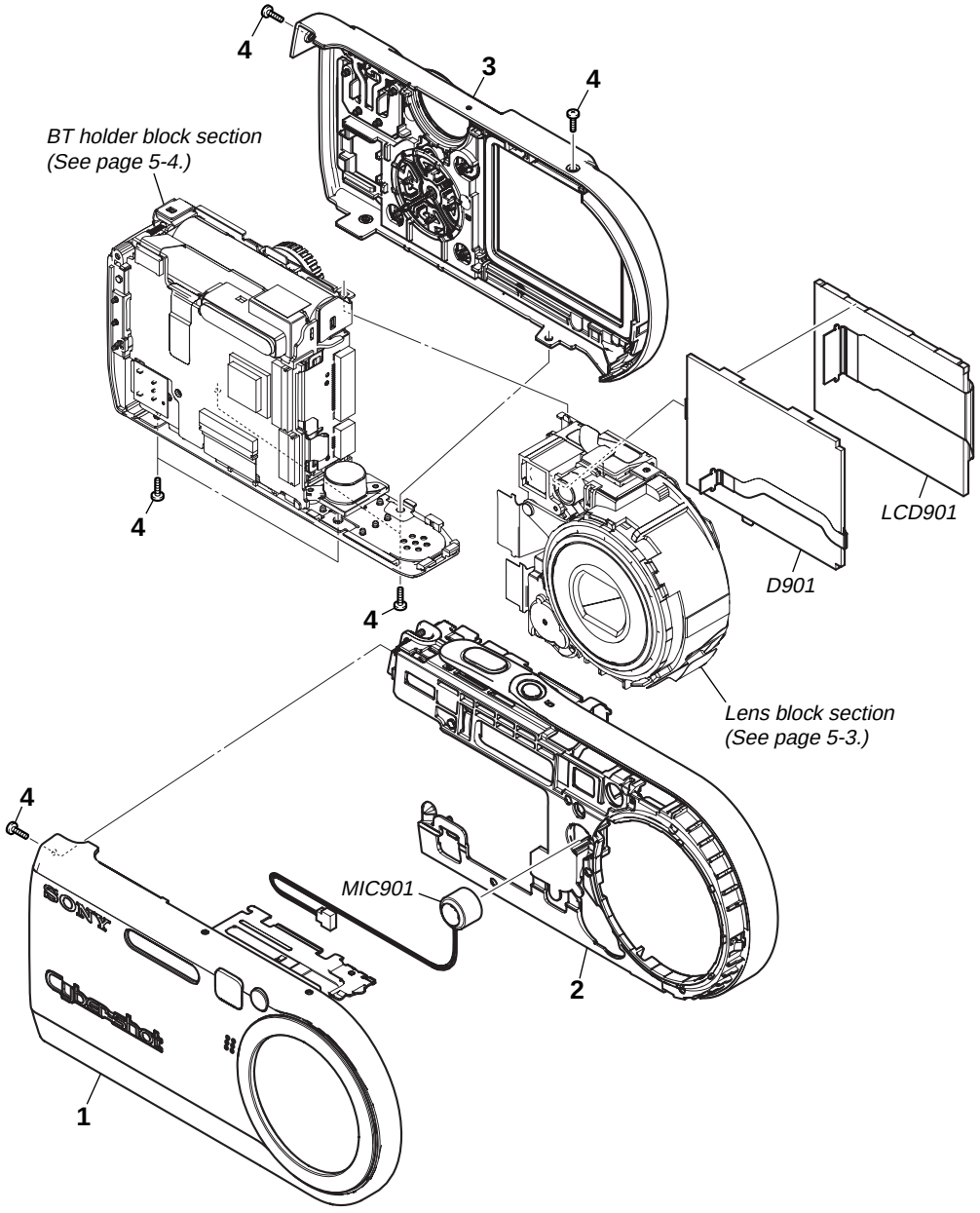
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

5. REPAIR PARTS LIST

5-1. EXPLODED VIEWS

5-1-1. CABINET BLOCK SECTION

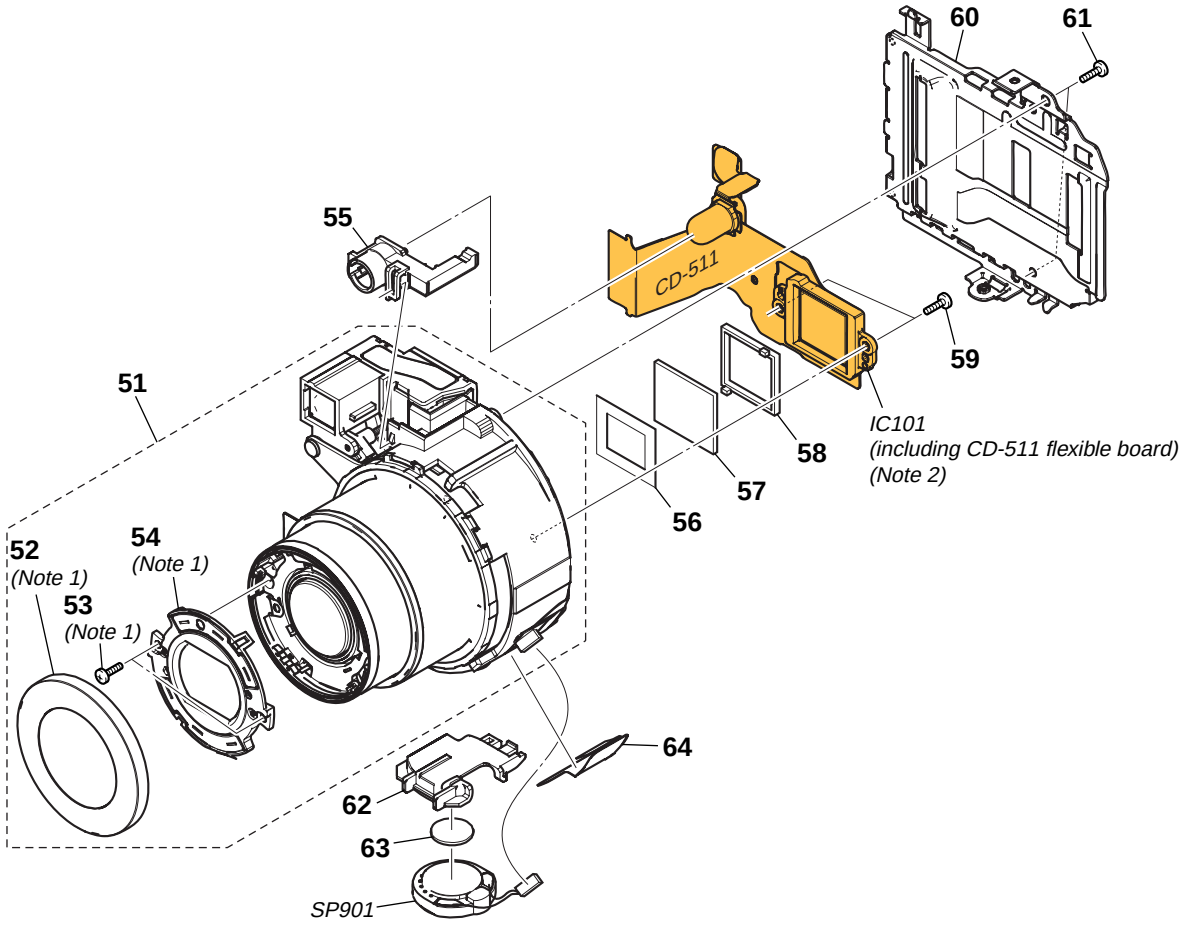


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
1	X-3954-442-1	CABINET (FRONT) ASSY (P100: SILVER)
1	X-3954-528-1	CABINET (FRONT) ASSY (P100: BLUE)
1	X-3954-529-1	CABINET (FRONT) ASSY (P100: RED)
1	X-3954-530-1	CABINET (FRONT) ASSY (P120)
2	1-478-672-11	SWITCH BLOCK, CONTROL (RL) (P100: SILVER)
2	1-478-672-21	SWITCH BLOCK, CONTROL (RL) (P100: BLUE)
2	1-478-672-31	SWITCH BLOCK, CONTROL (RL) (P100: RED)
2	1-478-672-41	SWITCH BLOCK, CONTROL (RL) (P120)
3	X-3954-443-1	CABINET (REAR) ASSY (P100: SILVER)
3	X-3954-531-1	CABINET (REAR) ASSY (P100: BLUE)
3	X-3954-532-1	CABINET (REAR) ASSY (P100: RED)
3	X-3954-533-1	CABINET (REAR) ASSY (P120)
4	3-086-218-31	SCREW (M1.4), LOCK ASE, SPECIAL (P100)
4	3-086-218-41	SCREW (M1.4), LOCK ASE, SPECIAL (P120)
⚠D901	1-478-461-11	BLOCK, LIGHT GUIDE PLATE (1.8)
LCD901	8-753-209-12	ACX329AK-J
MIC901	1-542-584-11	MICROPHONE

5. REPAIR PARTS LIST

5-1-2. LENS BLOCK SECTION



(Note 1) Be sure to read "2-3. Exchange Method of Barrier Assy" on page 2-5 when change Ref. No. 52, 53 and 54.

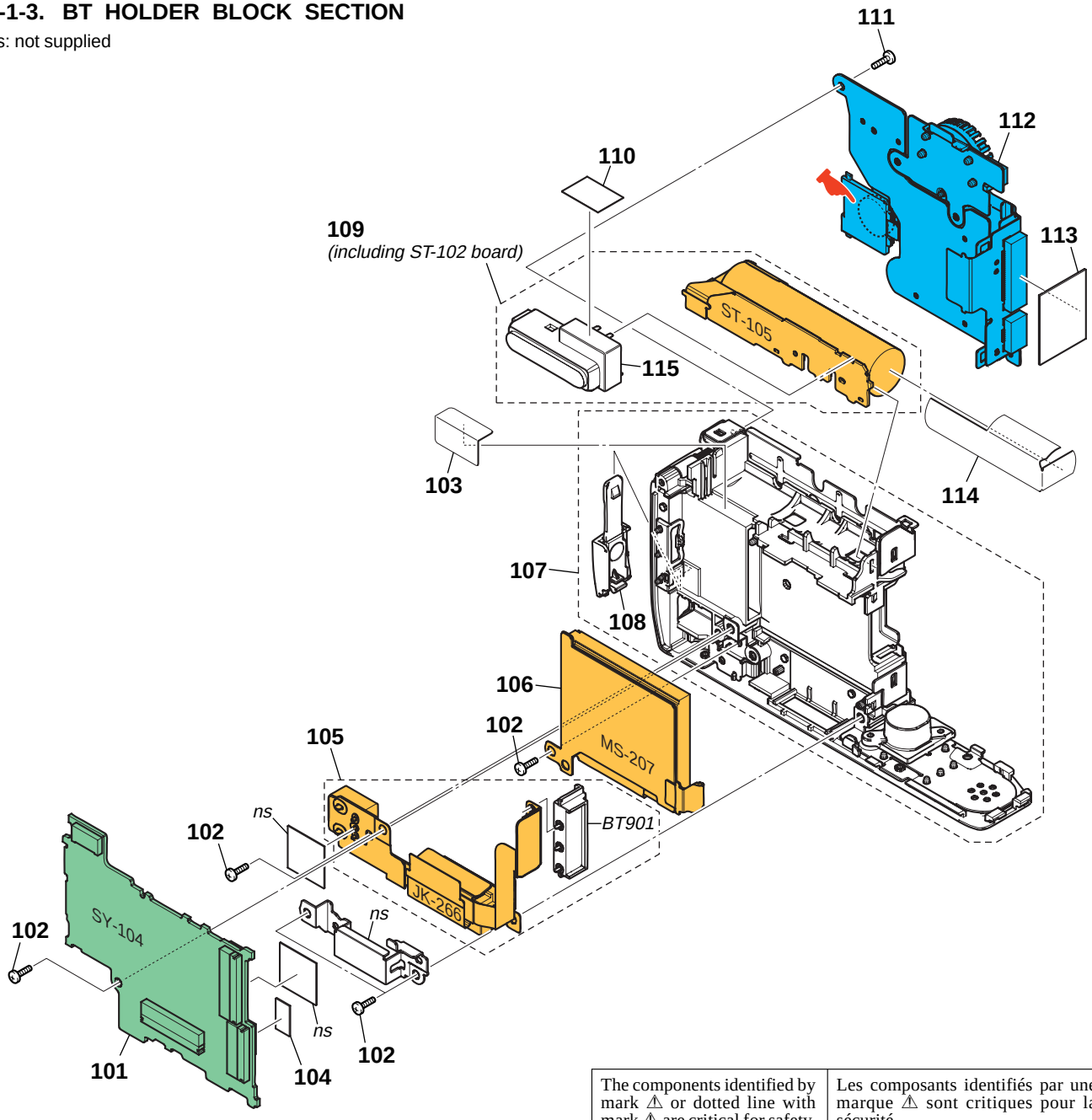
(Note 2) Be sure to read "Precuations for Replacement of CCD Imager" on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description
51	1-788-101-11	LENS, VIDEO (EC01A)
52	3-091-427-01	RING (A), ORNAMENTAL (Note 1)
53	3-086-156-31	SCREW, TAPPING (P2) (Note 1)
54	X-3954-476-1	BARRIER ASSY (Note 1)
55	3-091-013-01	HOLDER, AF
56	2-021-317-01	MASK, LPF
57	1-788-104-11	OPTICAL FILTER BLOCK
58	2-021-318-01	SEALGOM 890
59	3-348-998-61	SCREW (M1.4X4), TAPPING, PAN
60	3-091-018-01	FRAME, LENS
61	3-080-204-11	SCREW, TAPPING, P2
62	3-091-014-01	HOLDER, SP
63	3-091-015-01	CUSHION (SP)
64	3-091-044-01	SHEET, PROTECTION, SP HARNESS
IC101	A-1054-884-A	CCD BLOCK ASSY (CCD IMAGER) (including CD-511 flexible board) (Note 2)
SP901	1-825-901-11	LOUDSPEAKER (1.3CM)

5. REPAIR PARTS LIST

5-1-3. BT HOLDER BLOCK SECTION

ns: not supplied



: BT001 (BATTERY, LITHIUM SECONDARY)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description
101	A-1067-319-A	SY-104 BOARD, COMPLETE (SERVICE) (including CH-146 board)
102	3-080-204-11	SCREW, TAPPING, P2
103	2-022-031-01	SHEET (SY), SHIELD
104	2-022-033-01	SPACER (MS), SY
⚠105	A-7079-033-A	JK-266 FLEXIBLE BOARD, COMPLETE
106	A-7079-036-A	MS-207 FLEXIBLE BOARD, COMPLETE
107	X-3954-441-1	HOLDER ASSY, BATTERY (P100: SILVER)
107	X-3954-525-1	HOLDER ASSY, BATTERY (P100: BLUE)
107	X-3954-526-1	HOLDER ASSY, BATTERY (P100: RED)
107	X-3954-527-1	HOLDER ASSY, BATTERY (P120)
108	3-090-996-01	LID, DC (P100: SILVER)
108	3-090-996-11	LID, DC (P100: BLUE)
108	3-090-996-21	LID, DC (P100: RED)
108	3-090-996-31	LID, DC (P120)
⚠109	A-7079-034-A	ST-105 FLEXIBLE BOARD, COMPLETE (including ST-102 board)
110	3-091-045-01	SHEET, INSULATING, STROBOSCOPE
111	3-086-218-31	SCREW (M1.4), LOCK ASE, SPECIAL
112	1-478-673-11	SWITCH BLOCK, CONTROL (SW)
113	2-023-687-01	SHEET, SHIELD, SW
114	2-022-032-01	SHEET, PROTECTION
⚠115	1-478-674-11	FLASH UNIT
⚠BT901	1-780-141-11	TERMINAL BOARD, BATTERY

5-2. ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description			
	A-1054-884-A	CCD BLOCK ASSY CD-511 FLEXIBLE BOARD, COMPLETE (Not supplied) **********			
		(CCD block assy is including CD-511 flexible board and IC101 (CCD imager).)			
		< CAPACITOR >			
C102	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C105	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C106	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C107	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
		< DIODE >			
D101	8-719-077-34	DIODE	SML-310YTT86 (FLASH/CHG)		
D102	8-719-075-29	DIODE	SML-510MWT86S (AE/AF LOCK)		
D103	8-719-077-09	DIODE	CL-196HR-CD-T (SELF TIMER/RECORDING)		
D104	6-500-505-01	DIODE	OPY5052 (SELF TIMER/ AF ILLUMINATOR)		
		< IC >			
IC101	(Not supplied)	CCD IMAGER (Note)			
		< TRANSISTOR >			
Q101	6-550-119-01	TRANSISTOR	DTC144EMT2L		
Q102	6-550-119-01	TRANSISTOR	DTC144EMT2L		
Q103	8-729-050-22	TRANSISTOR	2SC4250 (T5LSONY1)		
		< RESISTOR >			
R101	1-218-937-11	RES-CHIP	47	5%	1/16W
R102	1-218-966-11	RES-CHIP	12K	5%	1/16W
R103	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R104	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R105	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R109	1-218-990-11	SHORT CHIP	0		

Electrical parts list of the CH-146 board is not shown.
Pages 5-6 is not shown.

(Note) Be sure to read “Precautions for Replacement of CCD Imager” on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description
⚠	A-7079-033-A	JK-266 FLEXIBLE BOARD, COMPLETE **********
⚠BT901	1-780-141-11	TERMINAL BOARD, BATTERY
		< CONNECTOR >
CN101	(Not supplied)	CONNECTOR, MULTIPLE (SOCKET)
		< DIODE >
D101	8-719-056-23	DIODE MA2S111-(K8).SO
		< FERRITE BEAD >
⚠FB101	1-469-185-11	INDUCTOR, FERRITE BEAD
⚠FB102	1-469-185-11	INDUCTOR, FERRITE BEAD
		< JACK >
⚠J101	1-817-331-11	DC JACK 5P (DC IN)
	A-7079-036-A	MS-207 FLEXIBLE BOARD, COMPLETE **********
		< CONNECTOR >
CN001	1-815-572-61	CONNECTOR, MEMORY STICK
⚠		ST-102 BOARD, COMPLETE (Not supplied) **********
		(ST-102 board is included in ST-105 flexible complete board.)
⚠	1-478-674-11	FLASH UNIT
		< CAPACITOR >

C505	1-127-715-91	CERAMIC CHIP	0.22uF	10%	16V
C507	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C509	1-137-723-21	CERAMIC CHIP	0.047uF	10%	250V
C511	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V

		< DIODE >
D501	8-719-073-01	DIODE MA111-(K8).SO
⚠D502	6-500-962-01	DIODE HAU160C030STP
		< IC >
⚠IC501	6-703-635-01	IC TND721MH5-S-TL-E
		< TRANSISTOR >
⚠Q503	6-550-183-01	TRANSISTOR CPH3209-SONY-TL-E
⚠Q506	6-550-891-01	TRANSISTOR GT8G133 (T2LSONY.Q)
		< RESISTOR >

R504	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R506	1-218-951-11	RES-CHIP	680	5%	1/16W
R510	1-218-937-11	RES-CHIP	47	5%	1/16W
R511	1-218-989-11	RES-CHIP	1M	5%	1/16W
R512	1-216-121-11	RES-CHIP	1M	5%	1/10W

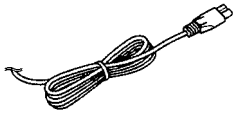
		< TRANSFORMER >
⚠T501	1-437-737-11	TRANSFORMER, DC-DC CONVERTER

Ref. No.	Part No.	Description
⚠	A-7079-034-A	ST-105 FLEXIBLE BOARD, COMPLETE **********
		(This complete board is including ST-102 board.)
		< CAPACITOR >
⚠C550	1-100-969-11	CAP, ELECT 115MF 315V

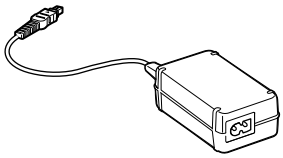
Electrical parts list of the SY-104 board is not shown.
Pages 5-8 to 5-12 are not shown.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

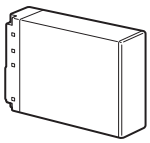
Checking supplied accessories.



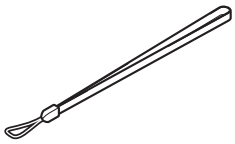
Power cord (1)
⚠ 1-769-608-11 (AEP, E)
⚠ 1-776-985-11 (KR)
⚠ 1-782-476-13 (CH)
⚠ 1-783-374-11 (UK, HK)
⚠ 1-790-107-22 (US, CND)
⚠ 1-790-732-12 (JE, J)
⚠ 1-827-945-11 (AUS)



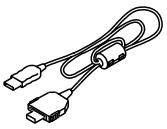
AC adaptor
AC-LS5 (1)
⚠ 1-477-730-31



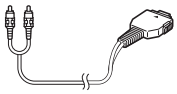
NP-FR1 battery pack (1)
(not supplied)



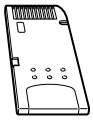
Wrist strap (1)
2-050-981-01 (P100)
2-050-981-11 (P120)



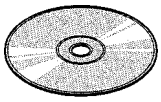
USB multi cable (1)
1-829-109-11



A/V multi cable (1)
1-829-108-11

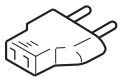


"Memory Stick" (32MB) (1)
(not supplied)

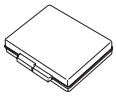


CD-ROM
(SPVD-012 USB driver) (1)
3-091-338-01 (US, J)
3-091-339-01 (EXCEPT US, J)

Conversion adaptor (1)
⚠ 1-569-008-12 (E)



Conversion adaptor (1)
⚠ 1-569-007-11 (E, JE)



Battery case (P100: 1, P120: 2)
(not supplied)

Soft carrying case (P120 only) (1)
3-092-013-01

Other accessories

3-091-477-01 MANUAL, INSTRUCTION (for BASIC) (JAPANESE) (J)
3-091-477-11 MANUAL, INSTRUCTION (ENGLISH) (US, CND, AEP, UK, E, AUS, CH, HK, JE)
3-091-477-21 MANUAL, INSTRUCTION (FRENCH, GERMAN) (CND, AEP)
3-091-477-31 MANUAL, INSTRUCTION (SPANISH, PORTUGUESE) (AEP, E, JE)
3-091-477-41 MANUAL, INSTRUCTION (ITALIAN, DUTCH) (AEP)
3-091-477-51 MANUAL, INSTRUCTION (TRADITIONAL CHINESE, SIMPLIFIED CHINESE) (E, CH, HK, JE)
3-091-477-61 MANUAL, INSTRUCTION (RUSSIAN, SWEDISH) (AEP)
3-091-477-71 MANUAL, INSTRUCTION (ARABIC) (E)
3-091-477-81 MANUAL, INSTRUCTION (KOREAN) (KR, JE)
3-091-477-91 MANUAL, INSTRUCTION (POLISH, CZECH) (AEP)
3-091-478-01 MANUAL, INSTRUCTION (for APPLICATION) (JAPANESE) (J)
3-091-479-11 MANUAL, INSTRUCTION (HUNGARIAN, SLOVAK) (AEP)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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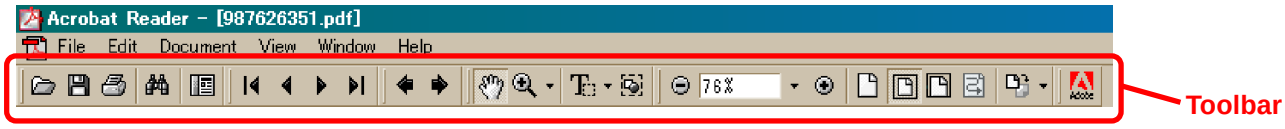
[Description of main button functions on toolbar of the Adobe Acrobat Reader Ver5.0 (for Windows)]



Printing a text

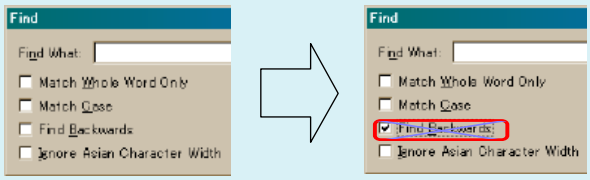
1. Click the Print button .
2. Specify a printer, print range, number of copies, and other options, and then click [OK].

Application of printing:
To set a range to be printed within a page, select the graphic selection tool and drag on the page to enclose a range to be printed, and then click the Print button.

Finding a text

1. Click the Find button .
2. Enter a character string to be found into a text box, and click the [Find]. (Specify the find options as necessary)

Application to the Service Manual:
To execute "find" from current page toward the previous pages, select the check box "Find Backward" and then click the "Find".



3. Open the find dialog box again, and click the [Find Again] and you can find the matched character strings displayed next. (Character strings entered previously are displayed as they are in the text box.)

Application to the Service Manual:
The parts on the drawing pages (block diagrams, circuit diagrams, printed circuit boards) and parts list pages in a text can be found using this find function. For example, find a Ref. No. of IC on the block diagram, and click the [Find Again] continuously, so that you can move to the Ref. No. of IC on the circuit diagram or printed circuit board diagram successively.
Note: The find function may not be applied to the Service Manual depending on the date of issue.

Switching a page

- To move to the first page, click the .
- To move to the last page, click the .
- To move to the previous page, click the .
- To move to the next page, click the .

Reversing the screens displayed once

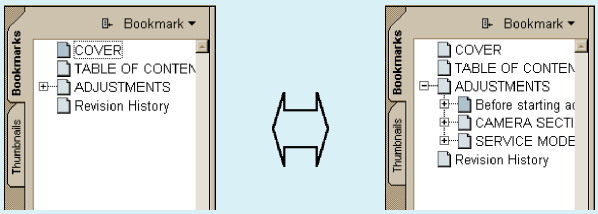
- To reverse the previous screens (operation) one by one, click the .
- To advance the reversed screens (operation) one by one, click the .

Application to the Service Manual:
This function allows you to go and back between circuit diagram and printed circuit board diagram, and accordingly it will be convenient for the voltage check.

Moving with link

1. Select either palm tool , zoom tool , text selection tool , or graphic selection tool .
2. Place the pointer in the position in a text where the link exists (such as a button on cover and the table of contents page, or blue characters on the removal flowchart page or drawing page), and the pointer will change to the forefinger form .
3. Then, click the link. (You will go to the link destination.)

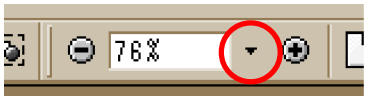
Moving with bookmark:
Click an item (text) on the bookmark pallet. and you can move to the link destination. Also, clicking can display the hidden items.
(To go back to original state, click)



Zooming or rotating the screen display

"Zoom in/out"

- Click the triangle button in the zoom control box to select the display magnification. Or, you may click or for zooming in or out.



"Rotate"

- Click rotate tool , and the page then rotates 90 degrees each.

Application to the Service Manual:
The printed circuit board diagram you see now can be changed to the same direction as the set.

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2004.04	Official Release	—	—